

13663

~~SECRET~~

Copy No. 114

ORR Contribution to NIE 11-4-66

MAIN TRENDS IN SOVIET MILITARY POLICY

CIA/RR MP 66-1
(ORR Project 50.6152)

April 1966

WARNING

This material contains information affecting the
~~National Defense of the United States within the~~
~~meaning of the espionage laws, Title 18, USC,~~
~~Secs. 793 and 794, the transmission or revelation~~
~~of which in any manner to an unauthorized person~~
~~is prohibited by law.~~

CIA HISTORICAL REVIEW PROGRAM
RELEASE AS SANITIZED

1998
CENTRAL INTELLIGENCE AGENCY

Office of Research and Reports

~~SECRET~~

GROUP 1
Excluded from automatic
downgrading and
declassification

~~S-E-C-R-E-T~~

FOREWORD

This contribution has been prepared by the Office of Research and Reports (ORR) in response to the Terms of Reference for NIE 11-4-66, Main Trends in Soviet Military Policy. The judgments presented in this contribution represent the current views of ORR and have not been co-ordinated with other offices of CIA. In this contribution, especially in the Statistical Appendix, we have presented somewhat greater detail than would be appropriate for the final estimate. We have attempted, in general, to show our reasoning with respect to the evidence throughout the contribution.

This estimate comes at a particularly difficult time for assessments of long-range trends in Soviet policy. The Soviet Union has been going through a period of leadership transition which has been complicated by the war in Vietnam and by the disruptive tactics of the Chinese. Although it is clear that certain long-range policy decisions have been hammered out during this period, it is not yet clear what these decisions involve in terms of the structure of future commitments, particularly in the military sphere. The uncertainties created by this situation are particularly relevant to the estimates of expenditures in the most recent time period (1965-66), for such estimates must be affected by the leading edge of expenditures on programs that we assume will be implemented in the near future. Yet, as important as are the uncertainties, we believe it to be equally important to stress that the trend in military expenditures over the next few years appears to be pointing upward.

~~S-E-C-R-E-T~~

p ii blank

CONTENTS

	<u>Page</u>
I. Factors Affecting Soviet Policy During 1965	1
A. The Strategic Balance	1
B. International Developments	2
C. Internal Developments	4
1. The Resource Allocation Issue	4
2. Military Claims on Resources	7
D. The Economy	9
1. Economic Requirements	10
2. Demands for Skilled Manpower	11
II. Current Trends in the Forces	13
A. Strategic Offensive Forces	13
B. Strategic Defensive Forces	15
C. General-Purpose Forces	16
III. Probable Future Developments	19
A. Trends in Military Doctrine	19
B. Trends in Personnel Appointments	22
C. Trends in Defense Expenditures	24
1. General Considerations	24
2. Total Expenditures	26
3. Composition of Expenditures, by Military Mission	27
4. Composition of Expenditures, by Category	29
5. Dollar Valuations of Soviet Military Programs	30
6. Future Trends	30
Appendix	
Statistical Appendix	33

(iv blank)

~~SECRET~~

Page

Tables

1. Soviet Defense Expenditures, by Mission, 1950-66	34
2. Percentage Distribution of Soviet Defense Expenditures, by Mission, 1950-66	35
3. Soviet Expenditures for Strategic Attack Forces, by Element, 1950-66	36
4. Soviet Expenditures for Strategic Defense Forces, by Element, 1950-66	37
5. Soviet Expenditures for General Purpose Forces, by Element, 1950-66	38
6. Soviet Defense Expenditures, by Category of Expenditure, 1950-66	39
7. Percentage Distribution of Soviet Defense Expenditures, by Category of Expenditure, 1950-66	40
8. Dollar Valuation of Soviet Defense Expenditures, by Mission, 1950-66	41
9. Soviet Expenditures for Strategic Attack Forces, by Element, 1950-66	42
10. Soviet Expenditures for Strategic Defense Forces, by Element, 1950-66	43
11. Soviet Expenditures for General Purpose Forces, by Element, 1950-66	44
12. Soviet Defense Expenditures, by Category of Expenditure, 1950-66	45

~~SECRET~~

~~SECRET~~

Following Page

Illustrations

Figure 1. Soviet Military Expenditures, by Mission, 1950-66	26
Figure 2. US and USSR: Percentage Distribution of Total Defense Expenditures, by Major Mission, 1965	28
Figure 3. US and USSR: Comparison of Defense Expenditures, by Mission, 1965	30

~~S-E-C-R-E-T~~

MAIN TRENDS IN SOVIET MILITARY POLICY

I. Factors Affecting Soviet Policy During 1965

The Soviet leaders are likely to have found little to encourage them as they viewed their strategic situation in the world at the beginning of 1966. Developments affecting the balance of military forces between the USSR and the US over the preceding year had clearly worked to their disadvantage. The war in Vietnam had stimulated the US to a rapid buildup of its forces to the point where US personnel levels began to rival in size those of the Soviet Union. Thus, to the disparity that the USSR had long suffered in strategic attack forces, it now faces the added prospect of falling behind also in theater warfare capabilities -- the dimension of military power that the USSR had long regarded as its favored domain. Furthermore, however negligible as a military power, China threatened to aggravate the Soviet Union's border security problems and to add to the tensions of international relations.

A. The Strategic Balance

The military balance during 1965 was unfavorable for the USSR. According to figures publicly available at the beginning of the year, the US missile strike capability in 1965 consisted of some 800 Minuteman and some 50 Titan II sites as well as some 450 submarine-based Polaris missile launchers. The Soviet ICBM force was not only much smaller but also more vulnerable, consisting of some 225 launchers, most of them soft and clustered at some 90 aiming points. Although the USSR appeared to be more active in the development of new ICBM systems at its test ranges, the US was deploying new launch positions at a faster rate, thus increasing the imbalance. Still further tipping the scales of intercontinental strike capabilities against the USSR was the US advantage in manned bombers. The US maintained a bomber strike capability consisting of some 700 B-52's and B-58's, to which the capabilities of its allies added some significant weight.

Confronted by this formidable strategic attack capability, the USSR had made sustained and vigorous efforts for several years to improve its defenses. To this end, heavy outlays had been made on surface-to-air missiles (SAM's), interceptor aircraft, and warning and control systems. Despite impressive achievements, Soviet strategic defense measures have not yet reached a stage where they could offer an adequate answer to the threat posed by the forces arrayed against them.

The relationship between the USSR and the US in conventional warfare strength was more evenly balanced, but even in this sphere there were significant disparities in mission capabilities. The forces available to the Soviet Union in Eastern Europe and in the Western border districts were fully capable of effective defensive actions against attack from Europe; with a short period of preparation they were also

1.

~~SECRET~~

capable of mounting strong offensive actions, including a full-scale invasion of Europe. Nevertheless, the overwhelming edge in active manpower which the Soviet Union had once enjoyed in this theater was now a thing of the past. A significant weakness in Soviet general warfare capabilities was its lack of an adequate ability to mount and sustain military actions in areas beyond the ocean borders of its own territory. The naval strength of the US and its allies was far superior to that available to the Soviet Union. With its large surface forces, including 16 powerful attack carriers, the US Navy was able not only to support offensive actions in many parts of the world but also to deny the Soviet Union the same capability.

B. International Developments

Seen from Moscow's point of view, international developments during 1965 added new dimensions of insecurity to the Soviet Union's military position. The rapid US military buildup occasioned by the war in Vietnam was the most ominous feature in this respect. Not only had it brought the US a measurable increment in general warfare capabilities, but it also had contributed intangible benefits of battle experience. Apart from what the war had already brought in terms of the military relationship between the USSR and the US, it had also added an alarming element of uncertainty to the international situation.

The war in Vietnam has affected the Soviet Union in several ways. On the military level, it generated sharp anxieties within the regime concerning the adequacy of current military programs, lending support to internal pressures which were always present within the regime for a buildup of Soviet forces. Although the US buildup could not be presented as a clear and present threat requiring the Soviet Union to make matching increases, it could be presented as an argument for greater efforts to prevent a further widening of the gap between US and Soviet power.

With respect to international policy, it raised the spectre of a deepening involvement in a dynamic and dangerous situation whose course and outcome could not be controlled. The possibility of a direct military confrontation with the US was clearly present -- most clearly, perhaps, in the question of whether or not the USSR takes the risk of shipping important military equipment to North Vietnam by sea. In 1965 the USSR declined to take this risk despite Chinese goading.

Finally, in relations with the Communist countries, the Soviet Union was faced with delicate and difficult choices. The position that the Soviet Union occupied in the dispute with China as well as Soviet national interests counseled a cautious policy with respect to assisting the North Vietnamese. Yet, to sustain its claim to be the leader of the Communist camp, the Soviet Union was under strong pressure to demonstrate vigorous support for an embattled ally. Most difficult of all for the Soviet leaders was the question of what to do in the event of a Sino-US conflict -- a prospect which undoubtedly became increasingly pressing and topical for Soviet contingency planners during the year.

~~SECRET~~

All of these problems promised to remain with the Soviet Union for some time to come. One of the features of Soviet press comment on the Vietnam war during 1965 was the preoccupation it displayed with the danger that the war might become enlarged. US writings on the concept of "escalation" in war were described and dissected in the Soviet press for the first time. The Chinese were charged directly with seeking to enlarge the war. The Soviet press also implied that Peiping wished to embroil the Soviet Union in war with the US and explicitly reiterated this charge in an official Party letter that was widely disseminated both inside and outside the Soviet Union. The fact that the USSR has so vigorously pressed this point strongly suggests that it is seeking to prepare advance justification for a refusal to act in the event of Sino-US hostilities.

How to handle the Chinese challenge is clearly one of the most vexatious items on the Soviet agenda of unsettled problems. After a period of ambivalence, in which the new Soviet leaders appeared to be working under the assumption that some chance remained for checking the deterioration of relations between the two countries, a more consistent policy aimed at isolating the Chinese in the Communist world emerged. From the ideological and political standpoint, the policy appeared to be paying dividends. Chinese standing in the world Communist movement suffered serious damage during 1965, and China's influence deteriorated in the less developed countries. Yet to reap benefits from this situation, the Soviet Union has been placed in the position of accommodating radical Communist leaders with a vested interest in hostility toward the US. Thus the gains that the USSR has made in the Communist movement at the expense of China have been accompanied by some loss of flexibility in Soviet policy toward the US.

Adding to all the other Soviet concerns with respect to China is the possibility of renewed Chinese provocations along the Soviet borders. Indications continued to accumulate during the year that the Soviet Union was adjusting its military posture in the east to strengthen its capability to deal with a military threat from that direction. The gradual reinforcement of army and security units in the Far East Military District, which had been underway for several years, continued during 1965. New measures were also taken in the Turkestan Military District opposite Sinkiang, including the possible relocation of some units to bring them closer to the border region. In addition, there were unconfirmed reports of troop movements to the east. Beyond the immediate problem of possible Chinese border incursions, the far graver problem of a growing nuclear capability in China faced the Soviet Union with the possibility that sterner measures to assure its security in the east would be required in the future.

In contrast with the generally gloomy picture presented by the trend of developments in Asia, some hopeful signs were discernible in the course of developments in the West. The divisive tendencies in

NATO, exacerbated by President DeGaulle's nationalistic policies, were threatening to bring about changes in the Western military alliance. In this situation, opportunities for Soviet political action aimed at impairing the effectiveness of the military coalition ranged against the USSR appeared to be brightening. Nevertheless, the possibility that West Germany might gain access to the control of nuclear weapons, or even decide to acquire a nuclear capability in its own right, remained a source of apprehension for the Soviet Union. Indeed, the tendencies toward nationalism which worked to weaken the Western alliance also worked to bring this possibility closer.

C. Internal Developments

Soviet military policy is affected not only by the requirements posed by developments in the external environment but also by pressures generated within the Soviet system itself. The requirements posed by defense needs come into conflict in the Soviet leadership with the requirements posed by other needs. In the processes by which this conflict is resolved, differing points of view are brought to bear on Soviet decisions. The ways in which this conflict is resolved -- the shifts in the balance of influence enjoyed by competing interest groups in the Soviet leadership -- constitute a vital factor in shaping Soviet military policy. The indications are strong that forces favoring a vigorous effort in defense policy gained an advantage in this internal conflict during 1965.

1. The Resource Allocation Issue

The new leadership, having criticized Khrushchev for poor management of economic affairs, was under strong pressure to improve the performance of the economy, which was faltering on the eve of a new five-year plan. Improvement of performance was to be effected on three fronts: managerial reform, administrative reorganization, and economic programs designed to improve the flow of output of agricultural and industrial products. The managerial reforms and reorganizations, while politically significant and potentially somewhat disruptive, were not directly relevant to the immediate problem of resource allocations. This particular problem came as a result of economic programs that threatened to cut into the limited supply of national resources available to support existing programs.

Whatever the specific programs that were being planned by the leadership, the military issue was certain to be involved. For whether the question was viewed as a choice between civilian and military production on a current basis or between investing for economic growth rather than for current consumption, it came down to a matter of assessing the urgency of the military's claims on national resources. Thus the principal issue facing the Soviet leadership at the beginning of 1965 was whether military requirements could be kept at a level commensurate with other goals and commitments.

~~S E C R E T~~

Judging by Kosygin's speech to the Supreme Soviet in December 1964, the Soviet leadership began 1965 with optimistic assumptions on this matter. In words reminiscent of Khrushchev's last speech before his downfall, Kosygin asserted that the development of heavy industry in the Soviet Union had reached a stage at which it was capable "to a considerably greater extent than before" of supporting agriculture, light industry, and the other branches of the economy serving the consumer's welfare. He also called for a speedup in the growth rate of the light industry side of the economy so that it could be brought closer to the traditionally favored heavy industry sector. Although there was nothing radically new in these proposals, they were politically bold, implying a willingness on the part of the leadership to undertake necessary measures in the economy even at the risk of violating shibboleths dear to the military heart.

A more concrete expression of the approach the leadership was taking to its economic problems was contained in the agricultural program which Brezhnev unveiled at the March Plenum. The significant features of the program in respect to matters of resource allocation were the size of the investment involved and the long-term nature of the commitment. The investment involved a doubling of state capital expenditures, compared with the average of recent years, and the underwriting of additional substantial expenditures in the form of state subsidies for higher agricultural prices. The timespan of five years over which the program was scheduled to run implied that the regime had arrived at a fairly firm determination that the needs of defense were not likely to grow inordinately and that long-term commitments could be made on behalf of economic expansion. That the program would involve some sacrifices for other claimants on national resources was implied by Brezhnev's statement that a "redistribution" of budgetary means would be required to support it.

There was no explicit indication that the leadership expected to find the necessary funds for agriculture at the expense of the armed forces. Indeed, Brezhnev completely ignored the subject of defense in his long speech outlining the agricultural program, as did Kosygin in his speech to the planners some days earlier. Yet the prospect of additional expenditures for agriculture may have forced the issue of defense requirements to the forefront. In any event, it soon became evident that strong pressures on behalf of defense interests were being brought to bear on the leadership. These pressures were no doubt also related to the darkening of the international outlook associated with the Soviet Union's involvement in the Vietnam war. By late spring, it was apparent that the regime's optimistic expectations for future economic programs had begun to dim.

For the first time since the beginning of the new regime, Soviet leaders began to speak of the burdens imposed on the economy by defense. These statements attract attention, if for no other reason than that the subject of defense expenditures had rarely been presented

~~S-E-C-R-E-T~~

in this way before in Soviet public statements. All of them reflected a defensive attitude regarding the size of defense expenditures. Some of them implied -- directly or indirectly -- that the size of these expenditures required some sacrifice of other goals.

Brezhnev was the first to raise the subject with his acknowledgement in his Victory Day speech that a considerable part of the Soviet national budget went for defense expenditures. "We do not conceal the fact," he asserted, "and the Soviet people understand well the need for such expenditures." Mikoyan followed with a speech on 29 May in which he stated, "Our state spares nothing to produce new kinds of weapons in large quantities to replace those which become obsolete." Admitting that this was expensive, he added, "It would be even more expensive if we failed to do this."

Suslov came next with a speech in Sofia on 2 June in which he pointed up a direct relationship between defense expenditures and welfare goals. "Of course we would like the life of the Soviet people to improve," he said, "but we are compelled to take into account objective reality which forces us to allocate considerable funds for the defense of our country." Kosygin carried this theme a step further in his speech in Volgograd on 11 July. He pointed out that the maintenance of up-to-date armed forces demanded "very large sums which we would gladly direct to other branches of the national economy." This could not be done, however, he said, because "to economize on defense would mean acting against the interests of the Soviet state and against the interests of the Soviet people." Finally, as if to add the credentials of collective authority to this official apologia, the theoretical journal of the Party, Kommunist, came out in the following month with an editorial which reiterated the substance of the above remarks.

These events marked the turning point in Soviet policy on the military issue during 1965. It is still uncertain whether a final resolution of the issue was achieved at the time or whether fundamental controversies continued throughout the subsequent plan and budget deliberations. But it now seems apparent that the change in the disposition of Soviet leaders -- manifested by these shifts in emphasis on the military issue -- did prevail and resulted in decisions that are now embodied in the plan for the coming year. It also appears that the changes in resource allocations that were adopted to accommodate military requirements did not reduce the commitments to agriculture undertaken at the March Plenum.

Thus a year after the Soviet leaders had started out with the evident intention of giving a new impetus to the growth of the economy, they have found themselves frustrated by the requirements of defense. Judging by the evidence cited above, this dilemma was one which had been unanticipated by the leadership at the beginning of the year. Hence the cause of the problems must be sought in some new

development during the year which increased pressures for military spending beyond the limits that could be accommodated within the existing framework of expectations and commitments.

2. Military Claims on Resources

There were many indications in the public commentary at the time that one source of these pressures was the military establishment. Not only was there the indirect evidence provided by the renewed assertions of the need for "strengthening" the armed forces that punctuated public statements during the spring and early summer, but also there was both direct and indirect evidence that demands were being put forward regarding some special issues concerned with military industry and military manpower.

That the subject of military industry had acquired some new importance in the regime's policy considerations was indicated in several ways. Some of the speeches mentioned above, as well as other speeches and articles, contained phraseology which seemed to imply some particular solicitude for military "industry" -- a specification which attracts attention because of its relative infrequency in general statements on military policy. Mikoyan, for example, in a speech delivered to the Tank Academy on 1 June described the development of military industry as "extremely" necessary. In his speech on 29 May he had also referred to military requirements in terms of the need for a steady flow of armaments production. Shelepin, in his speech in Severomorsk on 24 July, also took pains to mention military industry -- in two places -- in his otherwise standard assertion that the government intended to devote untiring attention to the strengthening of the armed forces.

More specific indications concerning the nature of the issue were provided by the military press. For example, an article by a Colonel Miftiyev, which appeared in Red Star on 4 June, put the issue in terms of the proper allocation of manpower between civilian and military production. He argued that in the conditions of the nuclear age the need for manpower in military industry was higher than ever before. Whereas states could previously count on transferring industry to military production after the start of a war, this might no longer be feasible. Hence the "stocks of materiel, in particular, of armament and ammunition," produced before the outbreak of hostilities have acquired "greater if not primary importance" among the factors which will determine the outcome of a future war. He argued that the problem of insuring adequate labor resources for military industry would not be eased appreciably by automation because production of advanced weapons did not lend itself to mass-production techniques. High-quality labor was particularly necessary for the production of modern military equipment, he asserted.

A different argument was advanced by General Kurochkin in the same newspaper on 9 July. Addressing the question of the nature of the imperialist threat at the present stage in history, Kurochkin

sought to make the point that the theoretical possibility of averting war did not lessen the possibility that war might nevertheless be thrust upon the Soviet Union. In developing this argument, he adduced figures to show that military expenditures in the NATO countries had risen continuously in the postwar period and that, in the United States at least, a favored component of this rising investment was research and development. The implied lesson was that the Soviet Union should match the efforts of its potential adversaries.

These indications taken together suggest that one of the issues brought to focus in Soviet policy during the period in question was the level of effort to be devoted to the development and production of military hardware. Whether this was brought about by the necessity of deciding on one or another weapons program or whether it reflected merely the insatiable appetite of the military establishment for a constant flow of economic resources into military production cannot be determined. Some new light on this question may be shed as evidence on the course of Soviet weapons programs is accumulated.

Another issue on which military pressures were brought to bear on Soviet policy during the year was the question of the ground forces' share of money, manpower, and hardware. Although much of the evidence on this subject is indirect, it adds up to a convincing case that changes were adopted in Soviet policy during the year aimed at improving the Soviet Union's capabilities to engage in conventional warfare. The implications of such changes for the problem of resource allocation would lie not only in the direct costs involved in maintaining and equipping higher manpower levels but also in the indirect costs to the economy involved in the diversion of additional resources of manpower and materials from other programs.

The evidence of a change in Soviet policy on this issue is derived both from the trends in doctrinal literature and from private disclosures by Soviet military officers. On the doctrinal side, there were scattered indications during the early part of the year that the question of the role and size of the ground forces had again become a subject of controversy. A polemical exchange between General Shtemenko and Marshal Rotmistrov over the question of whether the infantry still warranted the title "queen of the battle field" was one manifestation of this development. Another was an article by Marshal Rotmistrov in Kommunist, in March, which indirectly argued for a strong ground force by disparaging the opposite policy which had been espoused by Khrushchev -- a policy which Rotmistrov described as setting off one branch of the armed forces against another on the basis of "subjective opinions." Another was an article by Marshal Malinovskiy in the restricted theoretical journal, Military Thought, in May, which included the assertion, "We consider it premature to 'bury' the infantry as some people do."

More direct evidence was provided by a series of statements by high Soviet military officers. The first was by Marshal Rotmistrov in June. Commenting on the balance of strength between the United States

and the Soviet Union, Rotmistrov emphasized that the Soviet Union was a continental power and that it would maintain the capability to overrun Europe even without the employment of nuclear weapons. It would be foolish, he averred, to think that in this situation the Soviet ground forces would be reduced. On the contrary, he said, they have been strengthened, for both nuclear and nonnuclear war. The second was by Marshal Chuikov in August. Commenting that he had been reinstated as Commander-in-Chief of the Ground Forces, he added: "Some people thought they could do away with the ground forces but found out they couldn't do this." The third was by Marshal Sokolovskiy in October. Commenting like Rotmistrov earlier on the "nuclear stalemate" between the United States and the Soviet Union, he asserted that a constant updating of views was necessary on the relative role of missiles and ground forces. The views on this question expressed in the book Military Strategy, he said, were being refined to include the possibility of nonnuclear war.

As with the question of military industry, it is difficult to translate this evidence into terms of the specific resource-consuming programs which may have been involved. It seems probable that the enhancement of status of the ground forces reflects some decision to increase military manpower beyond the levels anticipated by Soviet planners at the beginning of the year. It seems probable, also, that a corresponding increase in planned procurement of ground forces equipment has accompanied this development.

Many small pieces of evidence can be assembled to show that pressures for military spending were intensifying at approximately the time the Soviet leadership was indicating that a turn in economic policy had occurred. These developments provide the grounds for certain broad conclusions concerning the trends in Soviet policy during 1965. The Soviet leadership began the year with the evident expectation that military expenditures could be kept at levels which would permit an acceleration of the growth of the economy as a whole. For reasons which are not entirely clear, but partly, at least, because of pressures from the military quarter, this expectation was disappointed. These developments suggest that a generally conservative tendency may now be gaining dominance in the leadership and that leaders disposed to stress military consideration in the formulation of policy are enjoying greater influence. More particularly, they point to an enhancement in the influence of professional military leaders in the formulation of policy. The broader economic implications are less clear because it is uncertain whether the decisions taken over the past year involve short-term or long-term commitments.

D. The Economy

Because 1965 was a year of preparation for a new five-year plan, the reevaluation of Soviet military policy had to interact with major decisions about economic objectives and policies. To set the context, it is useful to review trends during the last few years and the implications of the published goals of the new five-year plan.

~~SECRET~~

1. Economic Requirements

The burden on the Soviet economy of defense expenditures cannot be specified in detail, because of uncertainties in current estimates and the importance of qualitative factors such as the requirements imposed by military programs upon scarce resources. Yet it is apparent that economic growth has slowed in recent years, whereas military programs have claimed resources that would be useful to revitalize Soviet industry and agriculture. During the period 1958-65, gross national product (GNP) increased about one-third (only one-half the rate of increase of the preceding eight years), total military expenditures increased about one-fifth, and expenditures for military research and development and space more than doubled. The use of extra scarce high-quality men, machinery, and materials in the military programs deprived the civilian economy of these much-needed resources and contributed importantly to the decline in the growth of GNP. Other factors in the poor performance were (1) the increasing inefficiency of Soviet institutions for planning and management in an economy that was growing both in size and in the diversity of demands by the military, industry, and households, and (2) the low rate of growth in agricultural output.

The initial announcement of the Soviet five-year plan for 1966-70 conceded that the resources taken for defense purposes hamper general economic growth and that further growth of the defense might of the Soviet Union is required in the new plan period. At the same time, the leadership is making a determined effort to regain the economic momentum of the 1950's by planning an annual rate of growth in GNP estimated at 6-1/2 to 7 percent. To achieve this acceleration in economic growth, Soviet planners are counting on rapid increases in factor productivity -- the increase in output per unit of labor and capital combined. The average annual rate of growth of factor productivity was a little more than 3 percent per year during 1950-58, when defense expenditures grew relatively slowly, and then fell to a rate of about 1 percent per year during 1958-63, when defense expenditures (particularly for research and space) were accelerated. The probable military and space programs through 1970 imply a continued increase in the requirement for highly skilled personnel and complex machinery, the very inputs that are needed to raise factor productivity in the civilian sectors. Furthermore, the emphasis in the new plan is on agriculture, where gains in productivity are less likely to be forthcoming. It seems probable, therefore, that the military programs and the needs of agriculture will hold Soviet economic growth to an average of 4 to 5 percent per year during this plan period.

It is conceivable that the USSR may be able to meet its growing requirements for the military over the next decade without increasing the share of resources going to defense. However, even this would create strain within the economy, especially if it is accompanied by a rapid annual growth of fixed capital investment.

~~SECRET~~

~~SECRET~~

If both GNP and defense expenditures grow at 4 percent per year, the level of defense expenditures would rise nearly 50 percent, from 18.2 billion rubles in 1965 to 26.9 billion rubles in 1975. This absolute increase of 8.7 billion rubles for defense in the next ten years would be substantially more than the absolute increase in defense between 1955 and 1965. Alternatively, if defense expenditures increased at only 3 percent per year, the absolute level of defense spending in 1975 would be about one-third higher than in 1965, an increase that is still considerably larger than during the past decade.*

2. Demands for Skilled Manpower

Over the next decade, the labor supply for the economy as a whole should be sufficient to provide annual increments to the labor force in line with those of the past few years -- 1.7 percent per year. The chronic shortage of skilled manpower will persist despite (1) expanding enrollment in professional and technical colleges, (2) "universally available" secondary schooling, and (3) continuing investments in on-the-job training. The low educational attainment of the Soviet labor force (currently 6 to 7 years, compared with 12 years in the United States) represents a major constraint on the effective use of modern technology on an economy-wide basis.

As in the past, military programs can be expected to preempt a disproportionate share of the nation's skilled manpower. This pre-emption is accomplished directly through the government's power to assign graduates of professional and technical schools to specific jobs for three-year periods, including service in the armed forces. It also is accomplished indirectly by central control over the incentive system. Material incentives -- including fringe benefits as well as premium wages and salaries -- are established to favor the military sector of the economy. Under such circumstances, therefore, the civilian sector is powerless to "bid away" skilled manpower from the high-priority military sector.

* If the share of defense in GNP were to drop, as implied in this alternative, the rate of increase in GNP would probably be larger, perhaps 4-1/2 to 5 percent.

II. Current Trends in the Forces

There was relatively little change in the levels and composition of the USSR's operational military forces during 1965, although activities were under way which promised substantial changes over the next few years. New strategic attack systems will begin to become operational this spring, and the phasing in of new launchers over the next two years will add substantially to the survivability and responsiveness of the strategic attack forces. Meanwhile, intensive research and development on still newer systems is continuing. A similar situation characterized Soviet activities in the air and missile defense fields. While there is little evidence that the older deployment programs are being phased out, some have come to a standstill; meanwhile, a major deployment of a new long-range SAM system is under way, and research and development activities looking toward the eventual deployment of an antiballistic missile (ABM) system are apparently being given priority attention. Trends in the general-purpose forces appear to reflect the same general pattern. Although it appears to be unlikely that these forces were altered significantly during 1965, there are strong indications that they are being augmented and improved and that their capabilities will be substantially strengthened over the next few years.

A. Strategic Offensive Forces

No new systems for strategic attack were introduced in 1965, although the construction for two new single-silo ICBM programs begun in 1964 continues. The first sites under construction in these programs should become operational this spring with others phasing in over the next two years. When completed, these sites will add greatly to the power of the Soviet striking capability and increase the number of hardened aiming points tenfold. Because a target complex of this magnitude is beyond the capabilities of any existing force to attack with a high probability of destruction, it appears to offer a guarantee that significant numbers of Soviet missiles will survive in the event of a surprise attack. In the Soviet view, this may be the first time that the USSR has enjoyed such a position. On the other hand, the additional launchers will still leave the Soviet ICBM forces numerically inferior to the US force.

We believe that the Soviets are improving the capabilities of the strategic missile forces by providing redundant communication networks. Moreover, the greater numbers of ICBM launchings from operational sites may also reflect increasing sophistication in the SRF exercises. Redundancy of communications and proficiency of operations are two vital prerequisites if political restraint is to be an option in the face of possible hostilities. For these reasons, current improvements will probably increase the Soviet leadership's confidence in its deterrent force.

~~SECRET~~

The level and structure of MRBM/IRBM forces remained static in 1965. The existing MRBM/IRBM force of more than 700 launchers still poses a very serious threat to areas on the Eurasian periphery. The force is concentrated primarily in the Western USSR and based predominantly on soft sites. Although vulnerable, the very numbers of sites would probably assure some degree of survivability.

Intensive developmental activity has continued at both major missile test ranges: the Tyuratam Missile Test Range (TTMTR), where the ICBM programs are conducted, and the Kapustin Yar Missile Test Range (KYMTR), where the MRBM and IRBM programs are conducted. At the TTMTR, a high level of testing has been maintained. The policy of the past seems to be continuing: new developments will be pursued with sufficient vigor that planners can be assured of future options for the qualitative and quantitative upgrading of the ICBM forces. Such a policy may be aimed at maintaining the quality of the Soviet deterrent as well as at avoiding the dangers of a serious lag in weapons technology. In the meantime, the USSR is devoting a priority effort to the development of space capabilities -- an effort which is undoubtedly motivated in part by military considerations.

One of the more recent and perhaps more serious turns in Soviet weapons design and doctrine has been the emphasis on "mobile systems." Models of what were purported to be mobile ICBM and MRBM/IRBM systems have been displayed in recent Moscow parades. If the claims made for the capabilities of these systems are true, they could add substantially to the survivability of the Soviet strike forces. However, we believe that the Soviets are only now beginning to test a solid propellant missile to strategic range -- in this case about 1,000 nautical miles. This leads us to discount to some extent their availability and to regard the claims as referring to prototypes rather than to fully proven missiles. The timing of the new test program appears to indicate a replacement for a large number of obsolescing MRBM's and IRBM's. No similar program in connection with the ICBM systems has been detected.

The importance of new mobile systems is derived primarily from the fact that they are susceptible to neither enumeration nor targeting. Consequently, the range of uncertainty associated with intelligence estimates of operational force levels is greatly increased, and the difficulty of targeting against these forces grows enormously.

The year 1965 brought no alteration of the trends in Soviet policy affecting the future role of the Long Range Air Force (LRAF). While the LRAF retains the capability of putting somewhat more than 100 heavy bombers over target areas in the United States, its relative importance among the means of strategic attack available to the Soviet Union is decreasing. The medium bomber force of the LRAF had as its primary mission attack in peripheral areas. In addition, it has long had a secondary mission of supporting naval operations. Arctic training over the past year continued on about the same level as 1964; however,

greater participation of Bison aircraft was observed. Bear aircraft have been assigned to the Soviet naval air forces for reconnaissance, apparently to aid in target acquisition. The Kitchen air-to-surface missile (ASM) for the Blinder is still not operational, and the sole ASM in service with the LRAF remains the Kangaroo, carried on the Bear. Since no follow-on heavy bomber has yet been observed and normal attrition will continue to reduce the numbers of the present force, it is estimated that the total force will be reduced by about one-third by 1972. This reduction in strength will not mean a comparable reduction in capability, however, because a larger portion of the remaining force will be equipped for aerial refueling and ASM's.

No new significant development in the ballistic-missile or cruise-missile submarine fleet took place in 1965. Construction of the E and J classes of cruise-missile submarines has continued. There is at present no direct evidence of a follow-on ballistic missile submarine to supplement or replace the discontinued G and H classes of ballistic-missile submarines. The Soviet fleet contains about 45 ballistic-missile submarines, most of which are in the Northern Fleet area. The role of the cruise-missile submarine remains that of strikes against enemy fleet units and coastal targets.

B. Strategic Defensive Forces

Soviet military policy continues to stress and commit substantial resources to the air and missile defense forces. The primary responsibilities for the development and operation of the defenses lie with the fighter aircraft, missile troops, and radio-technical troops assigned to the PVO Strany (Air Defense of the Country). The magnitude and variety of attacking forces, with which these forces might conceivably have to cope, render the task given them extremely difficult and possibly unattainable within the constraints of current technology. Thus it is not surprising that huge expenditures are poured into developing and deploying advanced air defense systems, most of which have been quickly rendered obsolescent by the advances in offensive systems. The expenditures on operations and expansion of the air defense system have roughly equaled those of the strategic attack forces -- about 13 billion rubles (in this case the equivalent for both forces of about \$25 billion) during 1961-65. These estimates do not include the intensive and costly R&D program at the Sary Shagan Missile Test Center (SSMTC), where Soviet weapons designers continue to strive unsuccessfully to develop a missile defense system which satisfies the criteria for national deployment.

Progress has apparently been registered, however, in an area which is of almost equal importance -- defense against high-performance aircraft. The most recent improvement in this critical area has been the deployment of a probable high-performance SAM which promises to become a major element in the defensive network. Although not yet sufficiently widespread to confirm the total deployment pattern, it appears

to be a system which can be deployed in barrier defenses and in point defenses for certain key strategic areas. Such a system, now being deployed in the Urals and the Western USSR, could add significantly to the capabilities of the widespread SA-2 system, currently the backbone of the air defense network. One incentive for this deployment might be Soviet concern over the possibility of renewed manned reconnaissance. The new SAM system will be complemented by improving air intercept capabilities provided by the Firebar, a twin-jet interceptor which began entering the PVO in 1964, and by the Fiddler, which will probably become operational before mid-1967.

Soviet concern with US reconnaissance capabilities and the development of military space systems has been manifested by the deployment of some Hen House radars to detect and track earth satellite vehicles. It is believed that a missile system using Hen House radar inputs could be deployed at an early date against reconnaissance satellites.

The probable ABM defenses at Moscow, which have been under construction for almost three years, probably are still several years away from providing comprehensive coverage of the ballistic missile threat to that vital area. The long construction time of the Moscow facilities together with the concurrency of this effort with a development program which is apparently still incomplete indicates both the urgency that the USSR attached to this deployment and the difficulties it is encountering in carrying out the program.

Improvements continue in the integration of air defense networks, automation is growing, and the sophistication of the units increases as they acquire improved equipment and streamline their procedures. But an air defense network is itself vulnerable to missile attack unless protected by an effective anti-missile defense. Developments in the field of ABM defense hold the key to the future trends in the defensive forces, and, although the USSR will strive for a solution to this problem, it is difficult to predict when significant breakthroughs will reward such efforts with a system for widespread deployment.

C. General-Purpose Forces

Having borne the brunt of Khrushchev's economizing policies over the past few years, the Soviet general-purpose forces stand to profit the most by the new policies that are being developed by the post-Khrushchev regime. Thus far the evidence bearing on trends in the general-purpose forces lies mostly on the political and doctrinal level. This evidence suggests that a fundamental reappraisal of the role of the general-purpose forces has been under way and that this has led to a requirement for larger, more versatile forces capable of adapting to a variety of contingencies -- both nuclear and nonnuclear, European and non-European. This requirement implies the need for

augmentation, reorganization, reequipment, and redisposition within the forces. There is some firm evidence that practical measures are being taken to implement the policies implied by these political and doctrinal indicators. Such evidence is not readily available, however, and in any event tends to lag behind actual developments by a considerable margin.

The changes in the theater forces include the Warsaw Pact as well as the Soviet military establishment. The Warsaw Pact, for many years little more than a paper organization, served more as a show-piece of Soviet diplomacy than a practical instrument of policy. Since the early 1960's, however, the Warsaw Pact has become an organization in which command and control arrangements have been improved and tightened, plans for common action in war have been developed and tested in large-scale exercises, and modernization of the equipment and weapons of the Eastern European* armed forces has been stepped up. Soviet policy, as well as Soviet and Eastern European doctrinal literature, attests to the fact that the Warsaw Pact is now regarded as an important element in Soviet offensive and defensive strategy for the European theater.

Within the Soviet theater forces, modifications have become apparent that seem calculated to enhance striking power and to provide greater mobility in both nuclear and nonnuclear conflicts. Some realignment of field armies has taken place, and new rocket, missile, and artillery weapons are being issued along with the continued introduction of new models of armored vehicles.

Growing conventional capabilities have been accompanied by shifts in the disposition of forces, the most noteworthy of which have been a redeployment of some units along the Sinkiang border region and an apparent buildup in the Far East. Though these shifts affect only a minor portion of the Soviet ground forces thus far, they may foreshadow a further buildup in the eastern military districts.

In the Navy these trends have taken the form of expanded efforts in the construction of surface and support ships, somewhat redressing the imbalance caused by the previous concentration on submarine construction. Most Soviet naval construction, however, continues to be of submarines. This is more in line with the broader tasks assigned to the general-purpose forces of the Navy, which include the defense against attacks by enemy carrier and submarine strike forces, the interdiction of enemy sea-lines of communication, and support for the ground forces. The current construction program appears to be better designed to create a fleet of larger, more heavily armed ships, thus increasing the Soviet capability to operate at great distances from the Soviet littoral. The principal inhibitions to such a policy in the past lay in the limitations of available ships and the lack of air cover. To some degree, this latter need may be met in the future by shipboard SAM armaments.

* Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Rumania.

Since 1963 there has been a major effort to improve the operational capability of the Soviet Navy, particularly for operations outside local sea theaters. This effort is believed to stem from a decision to undertake more aggressive operations against the enemy on the open seas through the use of submarines, surface strike groups, and aircraft in both theater and strategic situations. The most notable developments in out-of-area exercises have been (1) the almost continuous maintenance of a small force of submarines (including recently a nuclear-powered submarine) and surface ships in the Mediterranean; (2) beginning in 1965, the long-range deployment of surface missile ship and submarine groups into the western Pacific; (3) the monitoring of US Polaris submarine bases at Holy Loch, Rota, and Guam by submarines and trawlers; and (4) long-range patrols of nuclear-powered submarines in the north-central Atlantic and in the north-central Pacific.

Although most of the Soviet Tactical Air Force (TAF) of some 3,200 combat aircraft is still composed of older day fighters, modernization has been continuing as new-generation fighter bombers and all-weather fighters are being brought into service. The tactical air elements provide the USSR with a versatile force capable of both air defense and ground attack missions. A significant development over the past year has been the assignment of new fighter units to the Far East Military District -- a development which may signal the beginning of a program which could substantially improve the fighting effectiveness of theater forces in that area. Soviet capabilities for long-range sea reconnaissance were also improved during the past year by the assignment of a number of Bear heavy bombers to the Soviet Naval Air Force (SNAF) to augment the primary force of medium-range bombers.

III. Probable Future Developments

Developments in Soviet military policy over the next few years will depend not only on the technical, political, and strategic factors discussed above but also on the men and ideas now coming to the fore in Soviet military thinking. The changes in weapons programs and force structure now under way in the Soviet Union have gone hand in hand with a readjustment in Soviet military doctrine. Beginning as a reaction to the over-simplifications of Khrushchev's military policy, this readjustment has now developed into a thoroughgoing critique of the theoretical premises and practical implications of the Soviet Union's strategic position. The central thrust of the thinking now evident in the military press is a search for ways to broaden the options available to the Soviet Union in the uses of its military power. Judging by the trends in doctrine over the past year, the men who are carrying out this readjustment, and the ideas they are generating, an impetus is being imparted to Soviet military policy that is likely to carry it along present lines for some years to come.

A. Trends in Military Doctrine

In discussing trends in Soviet military doctrine, it is important to bear in mind certain facts about the nature of the subject. Soviet military doctrine is not a fixed body of ideas. It is a set of general principles intended to provide guidelines for policy-makers in deciding the practical questions of force structure and the allocation of military resources among various end uses. It is susceptible to change and development in accordance with the changing requirements of a dynamic strategic situation and with the changing views of Soviet military theorists. The impact of these factors for change is frequently registered in the writings on doctrine which appear in the Soviet military press and journals. It is from this point of view that the trends in doctrine discussed in the following paragraphs should be viewed. They are significant as clues to the directions in which Soviet military policy is moving. They do not provide a comprehensive account of the current contents of Soviet military doctrine, which still retains many of the features of the Khrushchev period, including an undiminished conviction that a reliable missile deterrent remains an essential requirement of Soviet military policy.

Recent Soviet military writings, however, have reflected a search for ways to loosen the rigidities imposed on Soviet military strategy by the assumption that any war involving the great powers will inevitably become a "rocket-nuclear" war. Underlying this search is the recognition that the present strategy of the USSR has deprived it of the flexibility necessary to deal with war situations in which its nuclear deterrent cannot be brought into play. Attention has turned to the two areas of potential development which appear to hold the greatest promise of restoring flexibility to Soviet strategy: capabilities for conventional warfare and strategic defense. In

~~SECRET~~

advancing their recommendations for an improvement of capabilities in these areas, Soviet military theorists have criticized not only the practical implications of Khrushchev's military policies but also the basic concepts which governed them.

A leader of the new military thinking has been Marshal Rotmistrov, who in an article in Kommunist in March 1965 launched the attack which is now being carried out on the doctrines that until recently had dominated Soviet military policy. Condemning with the label of "subjectivism" the fundamental concept of Khrushchev's military policy -- the view that any military engagement between the great powers must inevitably involve a major nuclear war -- Rotmistrov implied that the Soviet Union's nuclear deterrent represented only a partial answer to the country's defense needs. Although he did not spell out the implications of his critique, it followed from his argument that the capability to bring Soviet military power to bear in situations in which the stakes did not warrant the risk of nuclear war was equally important.

There have been many indications in the doctrinal literature over the past year that the views advanced by Rotmistrov have gained broad acceptance in Soviet military circles. Soviet theorists now recognize that between the poles of localized war ("imperialist colonial" and "national liberation") and full-scale nuclear war involving the major antagonists, a spectrum of war situations is possible. With increasing explicitness, Soviet theorists speak of the possibility of prolonged conventional war and of war limited to tactical nuclear weapons. In October 1965, Marshal Sokolovskiy disclosed that even his book, Military Strategy, was being revised to include the new views on the possibility of nonnuclear war.

A corollary of this theoretical development has been a growing tendency to emphasize the practical implications of the standard Soviet view that victory in war depends on the combined action of all arms and services. No Soviet military man has publicly questioned the preeminent role assigned to the strategic missile forces in the Soviet Union's defense posture, but some have implied that the past concentration on these forces to the neglect of other branches has resulted in an unbalanced force structure. Others have implied that a compensating buildup of other forces is now in order.

Most of the comments along this line have appeared to reflect concern that adequate measures are taken to assure the maintenance of strong ground forces. This purpose is manifest in the efforts that have been made to publicize the fact that the Western powers were maintaining strong ground forces and were preparing themselves to wage conventional as well as nuclear war. The object lesson implied by these accounts was sometimes drawn explicitly; the doctrine that victory in war requires the combined action of all arms of services has been reiterated frequently, as has also the view that modern war will require "massive" armies. A new note in this theme was struck by

~~SECRET~~

~~SECRET~~

General Shtemenko in an article in Soviet Russia in November 1965. Acknowledging that the SRF remained as formerly the "main and decisive" branch of the Soviet armed forces, he went on to point out that under certain conditions -- in wars not involving the use of nuclear weapons or involving their limited use only -- the Ground Forces would become the "main and decisive" branch.

The other "older" branches of the armed forces have also gained support in this public reevaluation of the country's force structure. A Colonel Prusanov, writing in Communist of the Armed Forces in an early issue of 1966, for example, specifically mentioned the Air Forces and the Navy as the branches which should profit from what he called the Party's current rejection of the distortions that had previously characterized Soviet military policy. The Air and Missile Defense Forces came in for special attention in a theoretical discussion of strategic mission concepts which was sponsored by the General Staff journal Military Thought in 1965. A subtle controversy over the relative roles -- and the relative importance -- of the Strategic Rocket Forces and the PVO seemed to be concealed behind the theoretical formulas in which the discussion was carried on. In any event, the discussion provided a forum for a powerful argument in favor of air and missile defense by Colonel General Tsyganov, the chief of staff of the PVO. Citing the danger of surprise attack and the invulnerability of enemy missile-carrying submarines, Tsyganov argued that the security of the country could not be assured without a powerful aerospace defense.

As the logic of these views would suggest, Soviet military theorists have come to recognize that the character and duration of a future war cannot be predicted with any certainty. In contrast with Khrushchev's assertions that a future general war would be decided in a matter of days, Soviet writers now give greater stress to the view that a future war may be prolonged even if nuclear weapons are employed. In the current literature, increasing attention is given to this possibility and to the further need for ready armies of great strength, backed by reserves of trained personnel plus adequate stockpiles of materiel and a capability to convert industry to a war footing rapidly.

The question of economic mobilization for war has been one of the central issues in Soviet military writings since the change of regime. The terms of the issue were set by two articles which appeared in Communist of the Armed Forces in September 1964. Whereas one article argued that the long-term economic development of the country was compatible with military interests, the other stressed the importance of giving immediate priority to military preparedness. Denying that general economic development automatically insured the defense needs of the country, the second article argued that it was essential to prepare for war during peacetime. Although both sides of this issue have been argued in other articles throughout the year, it appears now that a temporary truce may have been reached. A note by one of the participants in the argument which appeared in Military Thought in

~~SECRET~~

November 1965 indicated that the issue was no longer whether there should be more preparedness, but rather what kind. It is the specifics of this question which will undoubtedly occupy Soviet economic and military planners over the next few years.

B. Trends in Personnel Appointments

Soviet policy is a product of a decision-making process that places a premium on the ability of men to advocate the interests they represent with vigor and skill. The caliber of the men who represent military interests in the policy forum is thus an important factor in deciding what the military will get in terms of official favor and material support. There is little evidence as yet to forecast the type of men who will be administering military affairs in the years ahead as the present aging high command gradually leaves the scene. However, in the opinion of knowledgeable Westerners, the new generation of military leaders is likely to be more responsive to the changing realities of military affairs and less fettered by the experience of the past. In the meantime, the influence of these younger men is making itself felt in the inner circles of the General Staff, where doctrine and policy are studied and debated. In the changes of personnel which have taken place in the General Staff over the past year, it is already possible to see some indirect connection with the influence of this younger generation.

The period following the fall of Khrushchev has been one of marked stability for the top levels of the Soviet high command. The only new important appointment among the deputy ministers of defense is that of Marshal Zakharov, who replaced the late Marshal Biryuzov as chief of the General Staff in late October 1964 following the latter's death in an air crash. More important for current trends in military policy are the subsequent personnel changes that have taken place within the General Staff. These changes, involving most of the key positions on the staff, are notably consistent with evidence that a shift has occurred in Soviet policy toward stressing the role of the general-purpose forces.

Marshal Zakharov is a highly respected professional soldier who has shown appreciation of both the old and new in military affairs -- an experienced man whose views were apparently acceptable to both the new leaders and the military. Under his aegis a substantial restaffing of the General Staff has taken place. During 1965, two first deputy chiefs of the General Staff, one of the deputy chiefs, and chiefs of several of the main directorates were replaced. The new appointments include: Generals Batitskiy and Kazakov as first deputy chiefs of the General Staff (Kazakov was also appointed chief of staff of the Warsaw Pact forces), General Gorbatov as deputy chief of the General Staff, General Kraynyukov as chief of the Military Science Administration, and Colonel Grylev as chief of the Military History Section of this Administration. In addition, General Shtemenko,

~~SECRET~~

deputy chief of the General Staff since the summer of 1964, was named chief of the Main Operational Directorate.

A number of these new staff members can be identified with views which appear to be compatible with the new policy stress on the development of conventional warfare capabilities. Of the new staff members, General Gorbatov has the strongest credentials in this regard. Writing in the classified military debates of 1960, he rejected the modernist argument of General Gastilovich which had opened the debates. Gorbatov was adamant in denying categorically the concept of a short war and the view that missiles had replaced artillery and aviation. Shtemenko and Kazakov also appear to be disposed favorably to conventional forces and a combined-arms doctrine. The views of Batitskiy and Kraynyukov on this subject have not been expressed publicly. However, there is some reason to believe that they may be linked with the general policy orientation manifested by the others mentioned above. Kraynyukov, for example, is reported by a knowledgeable Westerner to be a "realist" -- a designation which was not further clarified but which would presumably include the notion of differentiation from the Khrushchev school of thought. Colonel Grylev is also described by the same individual as a "realist." In 1963, Grylev was reported as having opposed the principal speakers at a military doctrine conference which had registered approval of a number of points of the then official military doctrine -- including, inter alia, the principle of the primacy of strategic missiles in modern war. More recently, at a May 1965 conference on military history, Grylev pointed out past errors resulting from subjectivism in military affairs -- including an underestimation of the role of aviation and tanks in modern war.

The role of Marshal V.I. Chuykov in the high command has been ambiguous since the change of regime. Chuykov, who in the past has expressed strong views on the need for massive ground armies, was believed to have been removed from his post as commander-in-chief of ground troops in July 1964, although the fact of his removal was not disclosed by the Soviet Foreign Liaison Office until December. At this time a reorganization affecting the high command was reported to have taken place in which administrative control of the ground troops was to be assumed by General Staff components with Marshal Grechko, First Deputy Minister of Defense and Commander of Warsaw Pact forces, assuming the functions of overall commander. The transfer of General Shtemenko from the post of chief of the Main Staff of ground troops to that of a deputy chief of the General Staff tended to lend credence to these reports. In addition, the new post of Deputy Minister of Defense for Combat Training was established, presumably reflecting increased attention to combined-arms operations and implying a further detraction from the responsibilities which had traditionally been assigned to the ground troops commander.

By 1 August 1965, however, it appeared that Chuykov, who had continued to serve as chief of Civil Defense, had been reappointed

~~SECRET~~

~~SECRET~~

Commander-in-Chief of Ground Troops. In a conversation with a US military attaché he said that he had been reinstated as Commander-in-Chief of the Ground Troops and that Ground Troops headquarters had been re-established within the past month. He then commented, "Some people thought they could do away with the ground troops but found out they couldn't do this." A few days later a Soviet liaison officer appeared to confirm Chuykov's statements when he acknowledged that Chuykov was commander-in-chief of unidentified forces in addition to being chief of Civil Defense. He would not say that Chuykov was commander-in-chief of ground troops, however. Chuykov's apparent reinstatement seemed consistent with the resurgence of conventional military concepts and, in view of his past statements in defense of powerful ground forces, appeared to present strong evidence in confirmation of this trend.

However, it now appears that this explanation is not tenable. The press has only rarely reported Chuykov's attendance at official military functions since that time, and his signature has continued to be missing from the obituaries of former ground troops commanders. Finally, accounts of Armed Forces Day functions in late February 1966 listed Chuykov with other Marshals of the Soviet Union but not with the deputy ministers of defense, which would have been the proper place for his name if he were indeed the Commander-in-Chief of the Ground Forces.

In light of the above, it must be concluded that the statements made to the US attaché last summer either did not accurately reflect the situation at the time or that the situation has since changed. Chuykov may, for example, have been restored to ground troops command for a brief period and then removed either as a result of some subsequent decision or for health reasons. It is also possible that the statements referred to some unrevealed organizational change involving the combination of civil defense responsibilities with the command of certain categories of ground troops. In any event, the ambiguities surrounding Chuykov's career do not appear to have been caused by fluctuations in ground troops policies during the past year, because indicators that the latter are enjoying support and increased status have continued to accumulate.

C. Trends in Defense Expenditures*

1. General Considerations

The estimates of Soviet defense expenditures for 1950-66 presented below are the result of a continuing effort by this Office to

* The data on expenditures presented in this contribution conceptually include all outlays for personnel and other operating costs, procurement of all hardware used by the military establishment (including nuclear warheads), construction of [footnote continued on p. 25]

~~SECRET~~

construct and maintain an expenditure series that reflects estimates of current force structure and incorporates improvements, based on accumulated information, in current understanding of historical trends in forces, programs, and activities. Evidence for the period since 1950* was systematically reviewed in order to restate, from the vantage point of March 1966, the historical pattern of Soviet defense programs -- procurement, deployment, and so on. For the period 1961-66 -- covered by National Intelligence Projections for Planning for 1966 (NIPP-66) -- an attempt was made to select the set of "most probable" programs from within the ranges of uncertainty presented there, taking into account the latest evidence. Certain projections beyond 1966 were made in an effort to preclude an unrealistic sagging -- the "tired-arm" effect -- in the expenditure series for 1965-66 by taking into account the effects of longer lead times of future procurement programs.

It should be noted that the ruble values discussed below and presented in detail in the statistical tables have been computed in constant 1955 price terms. The major advantage of constant price costing is that changes over time in any given expenditures series -- for example, total expenditures, procurement of ICBM systems, and the like -- may be viewed as real changes in the magnitude of programs rather than the result of changing prices. The major disadvantage of constant price costing is that it does not take into account inflationary or deflationary price changes over time.** For instance, if there is a 10 percent increase in the price of a given model of weapon, the estimates of expenditure in constant prices underestimate actual Soviet outlays. The result is that it is incorrect in principle to compare the series in this contribution with a series dealing with Soviet defense expenditures based on "current ruble prices." The ideal solution would be to present the estimates in both constant and current price terms, but the available evidence on the price behavior of Soviet military goods and services is at present inadequate to permit the direct conversion to current prices.

facilities, military and nuclear research and development activities, and all space programs. Many of the funds required to cover these expenditures come from sources other than the budget account labeled "Defense" by the USSR.

* The expenditure data prepared for NIE 11-4-65 covered the historical period back to 1955. The extension of the data in this contribution back to 1950 represents the completion of ORR efforts to construct a consistent time series for the period beginning with the military buildup of the Korean period.

** A truly inflationary or deflationary price change is one for which there is not a corresponding and proportional change in quality of the good or service.

~~SECRET~~

It is believed, however, that estimates in constant ruble prices do provide a reasonable approximation of not only how the total expenditures for the estimated force structures would appear to Soviet military planners, but also, and perhaps more important, how the expenditures for given programs would appear relative to other programs -- military or non-military.

The dollar valuations of Soviet military programs which are also presented below have been constructed to show what the estimated Soviet military programs would cost if purchased in the US at 1964 dollar prices. As such they can provide US planners with an appreciation of the physical magnitude of given Soviet programs and also provide a useful basis for comparison with US programs. Because of significant differences in the price structures of the two countries, however, the dollar valuations of Soviet programs do not necessarily provide the most accurate indication of the relative costs of given programs from the Soviet point of view. For example, when calculated on a dollar equivalent basis, Soviet expenditures for personnel in 1965 are 35 percent of total expenditures, but on the ruble basis, the personnel share is only 25 percent. It is, of course, the 25 percent figure that would be of concern to the Soviet planner. On the other hand, program comparisons based on dollar valuations aimed at showing proportions or relative sizes are appropriate if the resource inputs to the programs being compared are weighted approximately the same. In these cases the comparison based on dollar valuations would give proportions similar to the ruble comparison. Because the input structures to various programs are not always obvious, however, it is probably safer in general to base such comparisons on the ruble expenditure data.

2. Total Expenditures

The currently estimated levels and trends in total expenditures for the period 1950-66 are shown in the chart, Figure 1. The estimates of total expenditures prepared a year ago in support of the Memorandum to Holders of NIE 11-4-65 are also shown in the chart for purposes of comparison.

The first major difference noted between the two series is the inclusion of data for the 1950-54 period in the more recent series. The very rapid increase in 1950-52 in expenditures and then the decline that occurs in the 1952-53 period reflect the impact of the Korean conflict on Soviet military programs. The increase for 1954-55 is primarily the result of the rapid buildup in nuclear delivery capability in the form of bomber aircraft for the LRAF.

For the 1955-63 period, the trends in the two series are almost identical, but the present estimate is consistently higher than the series prepared a year ago by between about one-third and one-half billion rubles annually. This difference is explained almost entirely by a significant upward revision in estimated expenditures

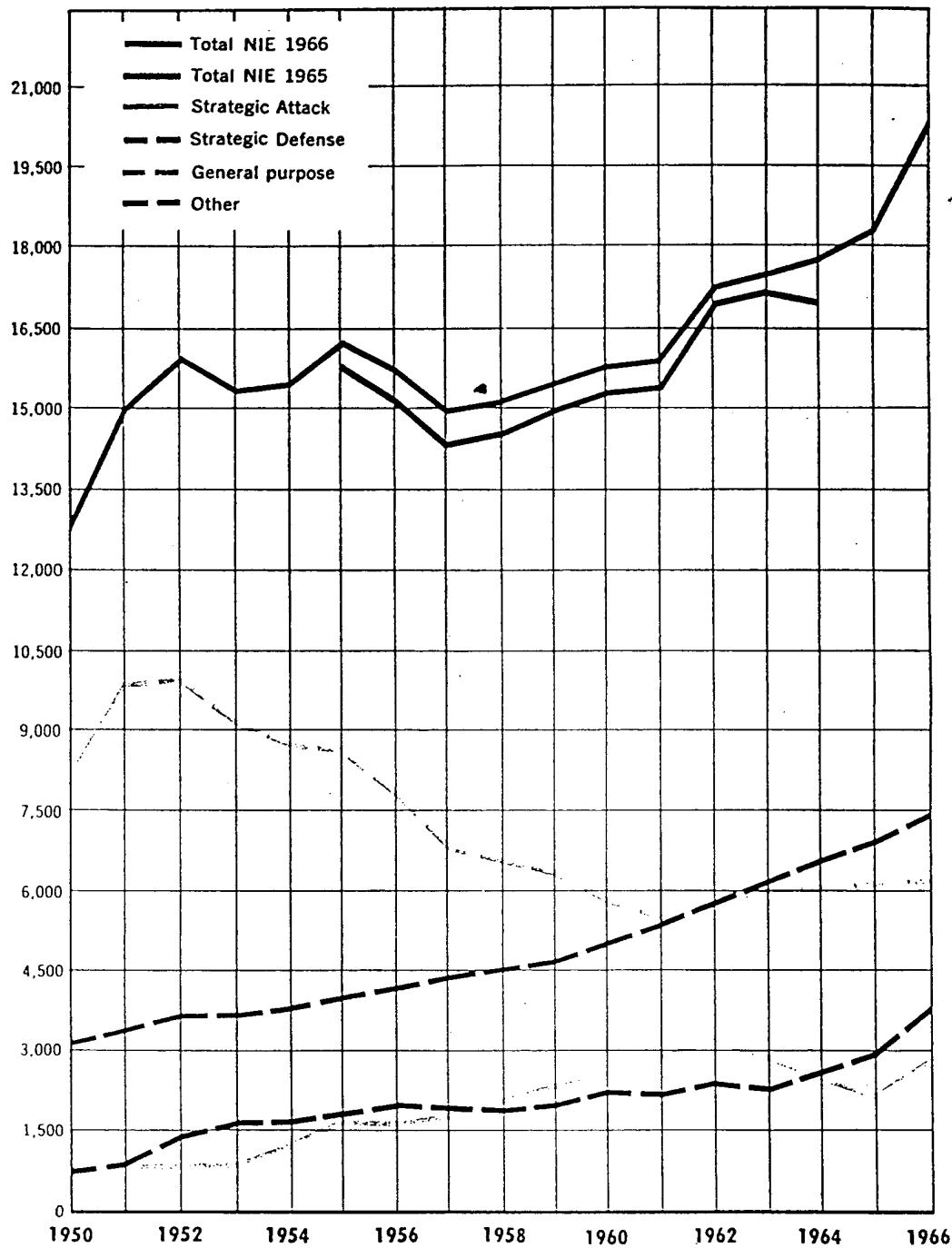
~~SECRET~~

Figure 1

Soviet Military Expenditures, by Mission

1950-66

Million
New Rubles*



*Expressed in 1955 prices.

53613 4-66 CIA

~~SECRET~~

GROUP 1
EXCLUDED FROM AUTOMATIC
DISPOSITION

~~SECRET~~

by the Soviet Ministry of Defense for wages of civilian personnel. This revision was based on analysis conducted in support of the expenditure data contained in NIPP-66.

The most significant difference between the two series is the trend shown for the 1963-66 period by the present estimate and that suggested by the series prepared last year. Last year's series showed a decline of about 200 million rubles from 1963 to 1964, whereas this year's estimate indicates an increase of about the same amount. Furthermore, the estimated expenditure levels for 1965 and 1966 in the new series indicate a significant upturn in total expenditures. However, since this rapid increase in expenditures is made up primarily of the leading edge of expenditures for ABM and advanced ICBM systems which will not be deployed until after 1966, these expenditures must be considered as being more uncertain than those for the earlier years, which are based on observed deployment.

The estimated increase in expenditures for the entire period is from 12.8 billion rubles in 1950 to 20.1 billion rubles in 1966, as shown in Table 1. This equals an overall increase of about 57 percent, or an average annual rate of 2.8 percent.

3. Composition of Expenditures, by Military Mission*

The US and Soviet percentage shares of estimated total expenditure for each of the major military missions, RDTE&S, and a general command and support residual labeled "Other" are shown in the chart, Figure 2. The trends in Soviet mission expenditures over time are shown in the chart, Figure 1.** Details on the behavior of percentage shares are contained in the statistical appendix, but a rough appreciation of the relative emphasis on the major missions for the USSR can be gained directly from Figure 1.

The very pronounced decline of expenditures for the General Purpose Mission during 1952-61 from a high of about 10 billion rubles to a low of about 5.5 billion rubles is immediately obvious. This decline represents a decrease in the share of total expenditures allocated to General Purpose Forces from about two-thirds in 1952 to about one-third in 1961 and thereafter. Even so, it is not until 1966 that the combined total shares for Strategic Attack and Strategic Defense surpass the share allocated to the General Purpose Forces. Expenditures for command and support programs remain essentially constant throughout the period so that the growth shown for the item labeled "Other" may be attributed entirely to RDTE&S.

The major point to be noted about the decline in expenditures in General Purpose Forces is that for the 1952-61 period; it made possible very appreciable increases in expenditures for Strategic

* See Tables 1 through 5.

** RDTE&S has been combined with "Other" expenditures in Figure 1 for purposes of graphic presentation.

~~SECRET~~

Attack and Strategic Defense programs and for RDTE&S without giving rise to proportional increases in total expenditures.

The most impressive increase, RDTE&S aside, is in the expenditures for the Strategic Defense Forces which increase from about three-fourths of a billion rubles in 1950 to almost four billion rubles in 1966. More significantly, these expenditures almost double in the 1958-66 period. The reasons for this growth are a continued large program for deployment of control and warning hardware; procurement of fighter aircraft in the early years; a very large SAM program; and the leading edge of ABM in the last few years. The behavior of expenditures for Strategic Attack has been somewhat more erratic with the peaks and troughs that represent buildup and completion of major weapon systems programs being more discernible. The peaks representing procurement of bomber aircraft in 1955 and expenditures for MRBM/IRBM and ICBM systems grow steadily, with the former peaking in 1962 and the latter in 1963. After a decline, the ICBM expenditures then increase and reach their highest level in 1966.

The RDTE&S Mission* shows the steadiest, and by far the largest, increase. Its share of the total grows from about 5 percent in 1950 to almost 25 percent in 1966. Expenditures for RDTE&S in 1966 are estimated to be more than 9 times those for 1950, an average annual rate of growth of about 15 percent, compared with an average annual rate of growth of 2.8 percent in total defense expenditures. The rising expenditures for this mission reflect the dynamic technical changes in the Soviet military establishment which began in the 1950's. The complexity, sophistication, and quantitative requirements for testing advanced weapons systems, together with space programs, have rapidly multiplied expenditures for RDTE&S. Development costs alone, in some cases, may outweigh those of subsequent deployment. Indeed, the cumulative amount estimated to have been spent for Soviet RDTE&S during the period 1950-66 is slightly greater than the cumulative expenditures for either the Strategic Attack Mission or the Strategic Defense Mission.

The method used for deriving the estimated Soviet expenditures for RDTE&S is basically different from that used for deriving the expenditures for the other missions. The latter are derived from explicit assumptions as to the size of the forces and other underlying physical quantities, whereas the expenditures for RDTE&S are derived

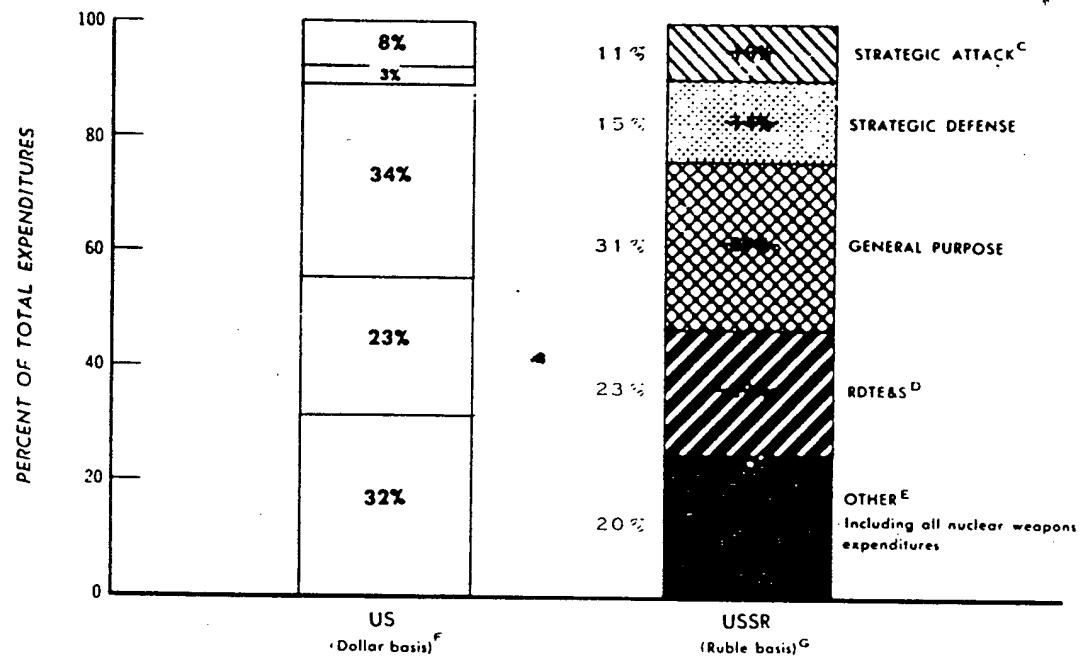
* Expenditures shown for this mission are broader in their coverage than the expenditures for research and development reported by the US Department of Defense. To obtain comparable coverage on the US side, the expenditures for research and development of the Atomic Energy Commission and all expenditures of the National Aeronautics and Space Administration were added to the expenditures for research and development of the Department of Defense.

~~SECRET~~

~~SECRET~~

Figure 2

**US and USSR: Percentage Distribution of Total Defense Expenditures
by Major Mission,¹ 1965²**



A. ALL EXPENDITURES FOR NUCLEAR WEAPONS ARE AGGREGATED UNDER THE "OTHER" CATEGORY. BECAUSE DETAILED DATA ON EXPENDITURES FOR US DEFENSE PROGRAMS, BY MISSION, DO NOT EXIST, THE US SIDE OF THIS COMPARISON IS ON THE BASIS OF PLANNED TOTAL OBLIGATIONAL AUTHORITY. ALSO, IN THE INTEREST OF COMPARABILITY, MILITARY ASSISTANCE AND CIVIL DEFENSE HAVE BEEN EXCLUDED ON BOTH SIDES.

B. US EXPENDITURES ARE FOR FISCAL YEARS 1965 AND SOVIET EXPENDITURES ARE FOR CALENDAR YEAR 1965.

C. "STRATEGIC RETALIATORY" IS THE DESIGNATION USED IN THE US.

D. IT IS NOT POSSIBLE AT THIS TIME TO DISTRIBUTE ESTIMATED SOVIET RDT&S EXPENDITURES BY MISSION, THEREFORE, ON THE US SIDE, ALL RESEARCH, DEVELOPMENT, TEST, AND EVALUATION (RTD&E) FOR THE RESPECTIVE PROGRAMS HAVE BEEN INCLUDED IN RDT&S. FURTHERMORE, BECAUSE THE SOVIET NUCLEAR ENERGY RDT&E AND SPACE PROGRAMS ARE COVERED CONCEPTUALLY BY THE ESTIMATE. ESTIMATED EXPENDITURES BY NASA FOR 1965 (\$4.90 BILLION) AND ESTIMATED EXPENDITURES FOR RDT&E PROGRAMS BY THE AEC (\$1.57 BILLION) HAVE BEEN INCLUDED HERE.

E. ON THE US SIDE, EXPENDITURES FOR GENERAL SUPPORT, RETIRED PAY, RESERVE, NATIONAL GUARD, AND THE NUCLEAR ENERGY PROGRAM (EXCLUDING RDT&E) ARE INCLUDED. ON THE SOVIET SIDE, EXPENDITURES FOR COMMAND AND GENERAL SUPPORT, RESERVE, MILITARIZED SECURITY FORCES, RETIRED PAY, AND THE NUCLEAR ENERGY PROGRAM (EXCLUDING RDT&E) ARE INCLUDED.

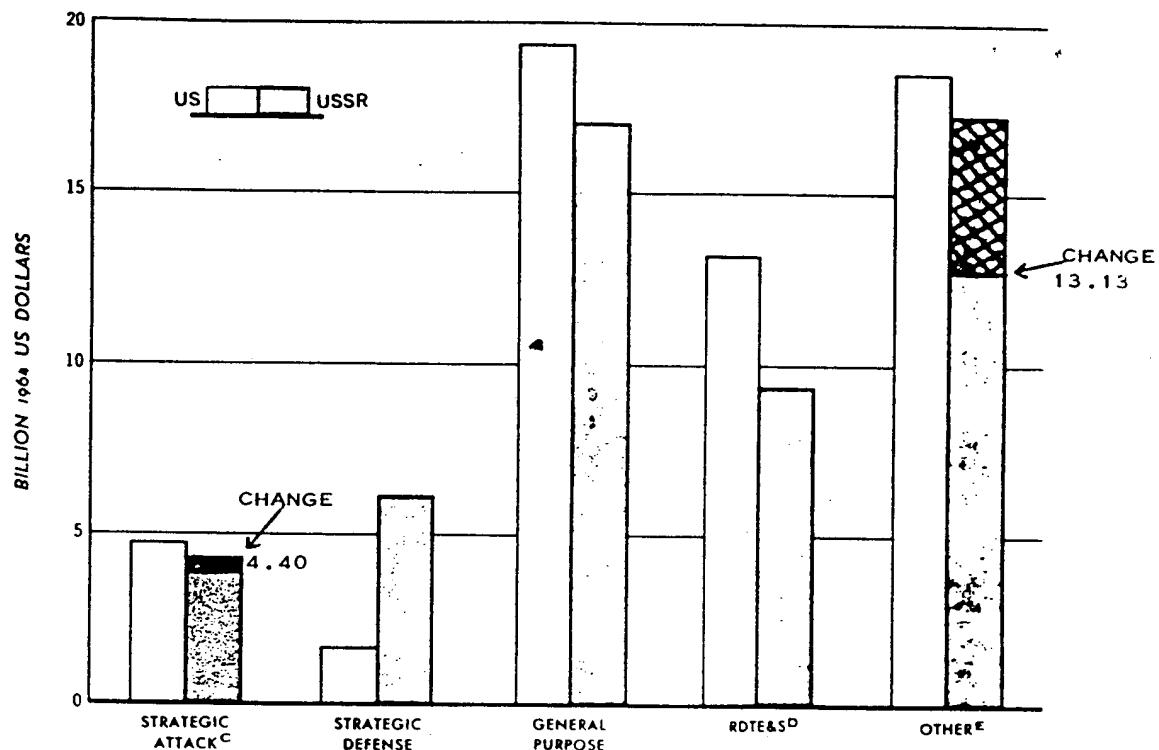
F. EXPRESSED IN 1964 PRICES.

G. BASED ON NEW RUBLES EXPRESSED IN 1955 PRICES.

~~SECRET~~

Figure 3

US and USSR: Comparison of Defense Expenditures by Mission, 1965^b



- A. BECAUSE DETAILED DATA ON EXPENDITURES FOR US DEFENSE PROGRAMS, BY MISSION, DO NOT EXIST, THE US SIDE OF THIS COMPARISON IS ON THE BASIS OF PLANNED TOTAL OBLIGATIONAL AUTHORITY. ALSO, IN THE INTEREST OF COMPARABILITY, MILITARY ASSISTANCE AND CIVIL DEFENSE HAVE BEEN EXCLUDED ON BOTH SIDES.
- B. US EXPENDITURES ARE FOR FISCAL YEAR 1965 AND SOVIET EXPENDITURES ARE FOR CALENDAR YEAR 1965.
- C. "STRATEGIC RETALIATORY" IS THE DESIGNATION USED IN THE US.
- D. IT IS NOT POSSIBLE AT THIS TIME TO DISTRIBUTE ESTIMATED SOVIET RDT&S EXPENDITURES BY MISSION, THEREFORE, ON THE US SIDE, ALL RESEARCH, DEVELOPMENT, TEST, AND EVALUATION (RDT&E) FOR THE RESPECTIVE PROGRAMS HAVE BEEN INCLUDED IN RDT&S. FURTHERMORE, BECAUSE THE SOVIET NUCLEAR ENERGY RDT&E AND SPACE PROGRAMS ARE COVERED CONCEPTUALLY BY THE ESTIMATE, ESTIMATED EXPENDITURES BY NASA FOR 1965 (\$4.90 BILLION) AND ESTIMATED EXPENDITURES FOR RDT&E PROGRAMS BY THE AEC (\$1.57 BILLION) HAVE BEEN INCLUDED HERE.
- E. ON THE US SIDE, EXPENDITURES FOR GENERAL SUPPORT, RETIRED PAY, RESERVE, NATIONAL GUARD, AND THE NUCLEAR ENERGY PROGRAM (EXCLUDING RDT&E) ARE INCLUDED. ON THE SOVIET SIDE, EXPENDITURES FOR COMMAND AND GENERAL SUPPORT, RESERVE, MILITARIZED SECURITY FORCES, RETIRED PAY, AND THE NUCLEAR ENERGY PROGRAM (EXCLUDING RDT&E) ARE INCLUDED.

~~SECRET~~

in a more general way as a monetary aggregate and are based on published Soviet data pertaining to expenditures for "Science." The estimated costs of military manpower for those personnel in the armed forces who are involved in RDTE&S projects are added to the resulting base series.

4. Composition of Expenditures, by Category*

As in the discussion above of the distribution of expenditures by mission, outlays for RDTE&S** programs are the primary source of growth in total defense expenditures. Fluctuations in the estimated expenditures for investment -- that is, procurement of equipment and construction of facilities -- are, on the other hand, the principal reason for the fluctuations in total expenditures, whereas the estimated expenditures for operating costs -- personnel and operation and maintenance -- tend to have a stabilizing influence. The large and consistent growth in RDTE&S expenditures coupled with a modest but consistent rise in the operations and maintenance portion of operating expenditures account for the general upward trend in total expenditures between 1950 and 1966. Personnel expenditures run counter to the trends for all other categories in that after 1952, when they reach a peak of nearly 7.5 billion rubles, they begin a downward trend which continues through the early 1960's, after which they level off at about 4.5 billion rubles.

Basic changes in the composition of procurement over the past decade are more marked than the movement of the total suggests because of offsetting trends. For example, although total expenditures for procurement increase by less than 5 percent between 1955 and 1966, the combined expenditures for missile systems, ground-based electronics, and nuclear weapons were four times those of 1965. In terms of their share of total procurement, these systems represent about 15 percent in 1955 and almost 60 percent by 1966. Procurement of all other types of equipment in the aggregate fall by 1966 to about one-half the 1955 level.

The growth of expenditures for RDTE&S together with that for the procurement of missile systems, ground-based electronics, and nuclear weapons are indicative of the economic impact of advanced weapon systems because these programs make the greatest demands on the scarce supply of high-quality resources. Total expenditures for these purposes in 1966 are nearly twelve and one-half times the 1950 level, almost five times the 1955 level, and almost twice the 1959 level. Another indication of the increased complexity of equipment within the Soviet military structure is provided by the trend in expenditures for operation and maintenance. Even though personnel costs and the overall level of manpower continue to decline, the cost of maintaining the new systems grows steadily and becomes a larger share of total operating expenditures. The breakdown of total expenditures by category provides further evidence that the Soviet military establishment

* See Tables 6 and 7.

** Although they are almost conceptually equivalent, there is a minor difference in coverage between the RDTE&S mission and the RDTE&S category. In the case of the RDTE&S mission, expenditures related to military personnel on active duty who are engaged in RDTE&S work are added to the estimated value of all RDTE&S work carried out directly for the military establishments as well as to all space programs.

~~SECRET~~

has grown more hardware intensive over time. Expenditures for the development, procurement, and deployment of weapons systems -- that is, RDTE&S, procurement, and construction of facilities -- have grown from 35 percent of the total defense expenditures in 1950 to almost 60 percent in 1966.

5. Dollar Valuations of Soviet Military Programs*

Soviet defense programs for 1950-66 have also been valued in 1964 US dollars -- that is, the dollar amounts it would have taken in the US in 1964 to purchase the goods and services required to support the Soviet military programs which have been discussed above in terms of 1955 rubles.

The results of such a comparison made for 1965 on a mission basis are shown in the chart, Figure 3.** The data used for comparison apply to calendar year 1965 for the USSR and to fiscal year 1965 for the US. Adjustments to the accounts as presented in other sections of this contribution were necessary to provide as much comparability as possible.

If the Soviet military package for 1965 were to be purchased in the US, the resulting expenditures, after adjusting both sides to attain comparability, would equal nearly 95 percent of the expenditures planned by the US for fiscal year 1965. The ratio for Strategic Attack Forces** expenditures is nearly the same as that for the total. In the case of General-Purpose Forces, Soviet expenditures are nearly 90 percent of those for the US. The largest difference occurs in Strategic Defense, where the Soviet figure is more than three and one-half times as large as the US figure. The estimated Soviet expenditures for RDTE&S amount to almost 75 percent of those of the US, and in the category "Other" the relationship is the same as that for total expenditures.

The shares of total expenditures allocated to each mission in the country's own currency are shown in the chart, Figure 2. This chart indicates similarities in the share of the total on both sides allocated to Strategic Attack, RDTE&S, and to a lesser extent to General-Purpose Forces. The major differences are in the shares devoted to Strategic Defense, where the Soviet share is nearly five times as large, and "Other," where the US share is higher than that of the USSR.

6. Future Trends

The range of uncertainty about the trend in military expenditures for the next few years has narrowed somewhat since last year's estimate. Additional information has become available about

* See Tables 8 through 12.

** The comparable US designation is "Strategic Retaliatory."

~~SECRET~~

~~SECRET~~

Attachment 3

Replace third and fourth paragraph of section 5, page 30 with the following:

If the Soviet military package for 1965 were to be purchased in the US, the resulting expenditures, after adjusting both sides to attain comparability, would equal about 85 percent of the expenditures planned by the US for fiscal year 1965. The ratio for Strategic Attack Forces** expenditures is slightly greater than that for the total. In the case of General Purpose Force, Soviet expenditures are nearly 90 percent of those for the US. The largest difference occurs in Strategic Defense, where the Soviet figure is more than three and one-half times as large as the US figure. The estimated Soviet expenditures for RDTE&S and the category "Other" amount to almost three-fourths those of the US.

The shares of total expenditures allocated to each mission in each country's own currency are shown in the chart, Figure 2. This chart indicates similarities in the share of the total on both sides allocated to RDTE&S Strategic Attack, and General Purpose Forces. The major differences are in the shares devoted to Strategic Defense, where the Soviet share is nearly five times as large, and "Other," where the US share is more than 50 percent greater.

~~SECRET~~

~~SECRET~~

deployment programs for ballistic missile defense, long-range SAM's, and ICBM's. As a result, as noted above, the estimates for expenditures after 1963 have been reversed in trend, and it now appears likely that they will grow significantly so that the projections for 1970-75 are more likely to move in the higher ranges of the NIPP projections.* In addition, as discussed in the policy section of this contribution, there is likely to be greater emphasis on the modernization of the ground forces than has been demonstrated in recent years.

It has been noted earlier in the contribution (Section I, D) that an average annual growth of military expenditures on the order of 3 to 4 percent would be compatible with Soviet capabilities. The higher number would lead to appreciably less growth in GNP and hence to less growth in modern industrial capacity and in consumer welfare. Evaluation of trends in Soviet military policy and in the views of Soviet leaders leads to the conclusion, however, that the present regime would accept the costs of a 4 percent rate of growth of expenditures for Soviet military preparedness.

* NIPP, Sections V and VI. Draft of March 1966. ~~(SECRET)~~

~~SECRET~~

STATISTICAL APPENDIX

The detailed data on which the foregoing discussion on expenditures is based are presented here in tabular form. The data are expressed in billions to two decimal places to make it possible for the reader to get some perception of smaller movements in the underlying physical data, but not to suggest that the accuracy of the data is such that significance can be attached to the second decimal place.

~~SECRET~~

[p. 32 blanks]

Table 1

Soviet Defense Expenditures, by Mission a/
1950-66

	Billion New Rubles b/																
	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>
Major missions	9.72	11.66	12.33	11.67	11.64	12.26	11.51	10.52	10.55	10.78	10.72	10.53	11.48	11.32	11.14	11.19	12.66
Strategic Attack c/	0.80	0.86	0.86	0.89	1.18	1.73	1.63	1.80	2.08	2.36	2.61	2.84	3.27	2.97	2.44	2.15	2.67
Strategic Defense d/	0.73	0.94	1.44	1.67	1.70	1.84	2.00	1.92	1.90	2.01	2.27	2.22	2.42	2.30	2.63	2.94	3.74
General Purpose e/	8.19	9.86	10.03	9.11	8.76	8.69	7.88	6.80	6.57	6.41	5.84	5.47	5.79	6.05	6.07	6.10	6.25
Command and General Support	2.59	2.79	3.03	2.95	2.94	2.99	2.99	2.89	2.83	2.74	2.71	2.69	2.71	2.70	2.70	2.71	2.73
RDE&S f/	0.51	0.57	0.61	0.70	0.84	0.99	1.21	1.47	1.69	1.92	2.31	2.66	3.00	3.50	3.88	4.26	4.69
Total	<u>12.81</u>	<u>15.00</u>	<u>15.96</u>	<u>15.31</u>	<u>15.42</u>	<u>16.23</u>	<u>15.72</u>	<u>14.89</u>	<u>15.07</u>	<u>15.45</u>	<u>15.74</u>	<u>15.89</u>	<u>17.19</u>	<u>17.52</u>	<u>17.72</u>	<u>18.15</u>	<u>20.07</u>

a. The expenditure data include all outlays for personnel and other operating costs, procurement of all hardware (including nuclear warheads), construction of facilities, military research and development activities, and all space programs. Many of the funds required to cover these expenditures come from sources other than the budget account labeled "Defense" by the USSR. Because of rounding, components may not add to the totals shown.

b. Expressed in 1955 prices.

c. For additional detail, see Table 3.

d. For additional detail, see Table 4.

e. For additional detail, see Table 5.

f. Including expenditures relating to military personnel on active duty who are engaged in RDE&S.

Table 2

Percentage Distribution of Soviet Defense Expenditures, by Mission a/
 1950-66

	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u> <u>c/</u>	<u>1966</u>
Major missions	76	78	77	76	75	76	73	71	70	70	68	66	67	65	63	62	63
Strategic Attack	6	6	5	6	8	11	10	12	14	15	17	18	19	17	14	12	13
Strategic Defense	6	6	9	11	11	11	13	13	13	14	14	14	13	15	15	16	19
General Purpose	64	66	63	60	57	54	50	46	44	41	37	34	34	35	34	34	31
Command and General Support	20	19	19	19	18	19	19	19	18	17	17	16	15	15	15	14	14
RDT&S	4	4	4	5	5	6	8	10	11	12	15	17	17	20	22	23	23
Total	<u>100</u>																

a. Because of rounding, components may not add to the totals shown.

b. Computed on a ruble basis expressed in 1955 prices.

c. The percentage shares in this table differ slightly from those shown in Figure 2 for the USSR because they are based on expenditures that distribute the outlays for nuclear weapons on a mission basis whereas in Figure 2, for comparability with the US, Soviet expenditures for nuclear weapons are not distributed by mission but are all included in the residual category "other."

Table 3

Soviet Expenditures for Strategic Attack Forces, by Element a/
1950-66

	Billion New Rubles <u>b/</u>																
	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>
Intercontinental Attack																	
IKA Heavy Bombers	0.05	0.04	0.39	0.28	0.36	0.41	0.62	0.76	0.93	1.30	1.65	1.32	1.29	1.94			
Ballistic Missile Subs	0.05	0.04	0.39	0.27	0.30	0.26	0.38	0.38	0.31	0.28	0.22	0.21	0.18	0.16			
ICBM's																	
Peripheral Attack	0.73	0.78	0.77	0.75	1.04	1.23	1.25	1.33	1.55	1.64	1.78	1.86	1.90	1.24	1.04	0.77	0.62
LRA Medium Bombers	0.73	0.78	0.77	0.75	1.04	1.23	1.22	1.19	1.12	0.71	0.62	0.55	0.52	0.49	0.50	0.46	0.42
MRBM's and IRBM's																	
Joint Support	0.07	0.08	0.09	0.08	0.10	0.11	0.11	0.11	0.10	0.08	0.06	0.07	0.08	0.08	0.09	0.10	
Total	<u>0.80</u>	<u>0.86</u>	<u>0.86</u>	<u>0.89</u>	<u>1.18</u>	<u>1.73</u>	<u>1.63</u>	<u>1.80</u>	<u>2.08</u>	<u>2.36</u>	<u>2.61</u>	<u>2.84</u>	<u>3.27</u>	<u>2.97</u>	<u>2.44</u>	<u>2.15</u>	<u>2.67</u>

a. The expenditures for Strategic Attack Forces comprise all expenditures for personnel, procurement, operation and maintenance, construction, and nuclear weapons for long-range attack weapon systems. This mission encompasses surface-to-surface missiles with a range of 600 nautical miles and more; ballistic-missile-launching submarine systems; and all heavy and medium bombers and tankers assigned to Long Range Aviation, including supporting personnel and equipment. All expenditures for research, development, test, and evaluation (RDTE&E) are included in the RDTE&S Mission. Because of rounding, components may not add to the totals shown.

b. Expressed in 1955 prices.

Table 4
Soviet Expenditures for Strategic Defense Forces, by Element a/
1950-66

	Billion New Rubles <u>b/</u>																
	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>
Control and warning	0.18	0.22	0.30	0.36	0.39	0.40	0.40	0.44	0.56	0.67	0.83	0.82	0.86	0.86	0.81	0.78	
Interceptor aircraft	0.31	0.39	0.74	0.96	0.87	0.80	0.93	0.94	0.77	0.68	0.60	0.57	0.58	0.47	0.54	0.55	0.71
SAM's and ABM's				0.01	0.10	0.30	0.34	0.18	0.21	0.37	0.63	0.84	0.98	0.99	1.23	1.58	2.25
AAA	0.24	0.32	0.40	0.35	0.35	0.34	0.34	0.36	0.35	0.29	0.20						
Total	<u>0.73</u>	<u>0.94</u>	<u>1.44</u>	<u>1.67</u>	<u>1.70</u>	<u>1.84</u>	<u>2.00</u>	<u>1.92</u>	<u>1.90</u>	<u>2.01</u>	<u>2.27</u>	<u>2.22</u>	<u>2.42</u>	<u>2.30</u>	<u>2.63</u>	<u>2.94</u>	<u>3.74</u>

a. The Strategic Defense expenditures comprise all expenditures for personnel, procurement, operation and maintenance, construction, and nuclear weapons primarily assigned to the defense of the USSR against air attack. This mission encompasses the control and warning network and all SAM's, ABM's, and aircraft assigned to the PVO Strany (Air Defense of the Homeland). Personnel and equipment in direct support of these units also are included. All expenditures for R&D&E are included in the R&D&S Mission. Because of rounding, components may not add to the totals shown.

b. Expressed in 1955 prices.

Table 5

Soviet Expenditures for General Purpose Forces, by Element ^{a/}
1950-66

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
Ground Forces	5.08	5.83	6.12	5.32	4.69	4.57	3.92	3.60	3.29	3.19	2.98	2.63	2.71	2.75	2.71	2.89	2.95
Tactical Aviation	1.49	1.94	1.48	1.40	1.77	1.30	1.16	1.03	1.04	0.85	0.65	0.65	0.67	0.85	0.89	0.88	0.92
Military Transport Aviation	0.20	0.22	0.25	0.30	0.28	0.32	0.47	0.53	0.62	0.66	0.72	0.77	0.77	0.78	0.76	0.70	0.73
Submarines ^{c/}	0.09	0.10	0.16	0.23	0.34	0.44	0.49	0.25	0.23	0.27	0.33	0.36	0.46	0.49	0.50	0.46	0.43
Surface Ships	0.60	0.70	0.71	0.64	0.64	0.61	0.57	0.53	0.55	0.55	0.53	0.51	0.50	0.51	0.53	0.53	0.53
Naval Aviation	0.25	0.46	0.71	0.74	0.61	0.94	0.76	0.33	0.35	0.40	0.25	0.18	0.23	0.25	0.25	0.26	0.29
Naval Joint Support	0.50	0.60	0.60	0.49	0.44	0.48	0.50	0.51	0.48	0.35	0.33	0.35	0.34	0.38	0.34	0.34	0.34
Naval Nuclear Weapons										Negl.	Negl.	Negl.	0.01	0.02	0.08	0.11	0.06
Total	8.19	9.86	10.03	9.11	8.76	8.62	7.88	6.80	6.57	6.41	5.84	2.47	2.72	6.05	6.07	6.10	6.22

a. Expenditures for General Purpose Forces comprise all expenditures for personnel, procurement, operation and maintenance, construction, and nuclear weapons for conducting land warfare and opposing enemy naval forces and shipping. This mission encompasses the following: (1) theater forces, which include ground combat forces, tactical rockets and missiles, and tactical air forces plus their associated command, support, and service elements; (2) military air transport and airlift elements; and (3) naval forces, which include the Soviet naval surface fleet, the naval air forces, and the submarine fleet except the ballistic-missile submarine forces. All expenditures for RDT&E are included in the RDT&E Mission. Because of rounding, components may not add to the totals shown.

b. Expressed in 1955 prices.

c. Excluding ballistic-missile submarines, which are included with Strategic Attack Forces.

Table 6

Soviet Defense Expenditures, by Category of Expenditure a/
1950-66

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
RDT&S ^{a/}	0.40	0.46	0.50	0.58	0.72	0.87	1.08	1.33	1.54	1.76	2.14	2.48	2.82	3.32	3.70	4.08	4.51
Investment expenditures	4.09	5.21	5.43	5.29	5.58	6.40	5.96	5.08	5.23	5.48	5.84	6.02	6.65	6.28	5.91	5.77	7.09
Procurement	3.66	4.71	4.89	4.80	5.06	5.86	5.45	4.65	4.78	5.00	5.40	5.51	5.98	5.73	5.44	5.07	6.05
Land armaments	0.60	0.78	0.82	0.75	0.70	0.79	0.75	0.69	0.65	0.53	0.37	0.33	0.31	0.33	0.33	0.34	0.34
Naval ships and boats	0.29	0.37	0.41	0.39	0.50	0.57	0.56	0.32	0.32	0.42	0.48	0.48	0.48	0.47	0.51	0.41	0.37
Aircraft	1.53	2.06	1.97	1.98	2.14	2.72	2.33	1.72	1.34	0.93	1.07	1.03	1.08	1.04	1.04	0.98	1.19
Missile systems	0.01	0.02	0.06	0.15	0.25	0.26	0.25	0.58	1.10	1.31	1.60	1.92	1.66	1.46	1.40	2.20	
Electronic equipment	0.17	0.25	0.36	0.35	0.35	0.39	0.51	0.68	0.72	0.79	0.73	0.74	0.70	0.69	0.63	0.56	
Nuclear weapons	0.08	0.12	0.13	0.22	0.26	0.33	0.38	0.48	0.60	0.60	0.76	0.79	0.90	0.98	0.86	0.75	0.81
Other	0.98	1.11	1.19	1.05	0.96	0.92	0.82	0.78	0.72	0.70	0.62	0.55	0.56	0.55	0.55	0.56	0.58
Facilities	0.43	0.50	0.54	0.49	0.53	0.54	0.51	0.43	0.45	0.49	0.44	0.51	0.67	0.55	0.46	0.70	1.04
Operating expenditures	8.32	9.34	10.03	9.44	9.12	8.96	8.68	8.48	8.30	8.21	7.76	7.39	7.71	7.92	8.11	8.30	8.47
Personnel	6.16	6.91	7.39	6.73	6.31	6.12	5.64	5.37	5.14	5.02	4.63	4.33	4.45	4.48	4.52	4.59	4.70
Operation and maintenance	2.16	2.43	2.65	2.71	2.81	2.84	3.04	3.11	3.16	3.19	3.13	3.06	3.26	3.44	3.59	3.71	3.77
Total	12.81	15.00	15.96	15.31	15.42	16.23	15.72	14.89	15.07	15.45	15.74	15.89	17.12	17.52	18.15	20.07	

a. Because of rounding, components may not add to the totals shown.

b. Expressed in 1955 prices.

c. Excluding expenditures relating to military personnel on active duty who are engaged in RDT&S.

39

Table 7
Percentage Distribution of Soviet Defense Expenditures, by Category of Expenditure ^{a/}
1950-66

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	Percent
R&ES	3	3	4	5	5	7	9	10	11	14	16	16	19	21	21	22	22	
Investment expenditures	32	35	34	35	36	39	38	34	35	35	37	38	39	36	33	32	35	
Procurement	29	31	30	31	33	36	35	31	32	32	34	35	35	33	31	28	30	
Facilities	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	4	5	
Operating expenditures	65	62	63	62	59	55	55	57	55	53	49	47	45	45	46	46	42	
Personnel	48	46	46	44	41	38	36	36	34	32	29	27	26	26	26	25	23	
Operation and maintenance	17	16	17	18	18	17	19	21	21	21	20	19	19	20	20	20	19	
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	

a. Computed on a ruble basis expressed in 1955 prices. Because of rounding, components may not add to the totals shown.

~~SECRET~~

40
-
SECRET

Table 8

Dollar Valuation of Soviet Defense Expenditures, by Mission ^{a/}
1950-66

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
Major missions	32.27	38.27	40.28	37.12	36.10	37.01	33.84	30.41	29.36	29.21	28.04	26.83	28.78	28.47	28.32	28.38	31.40
Strategic Attack ^{b/}	1.88	1.96	1.94	1.88	2.56	3.93	3.50	3.76	4.18	4.55	5.00	5.43	6.30	5.88	5.09	4.62	5.82
Strategic Defense ^{c/}	1.95	2.45	3.67	4.24	4.30	4.57	4.94	4.80	4.55	4.64	5.00	4.92	5.42	5.15	5.79	6.29	7.78
General Purpose ^{d/}	28.14	33.86	34.67	31.00	29.24	28.51	25.40	21.85	20.63	20.02	18.04	16.48	17.06	17.44	17.47	17.80	
Command and General Support	10.89	11.70	12.66	12.69	13.01	13.32	13.56	13.26	12.86	12.50	12.40	12.17	12.24	12.14	12.12	12.10	12.19
RDT&S ^{e/}	1.09	1.22	1.31	1.50	1.82	2.16	2.65	3.21	3.71	4.21	5.08	5.84	6.60	7.71	8.55	9.40	10.35
Total	44.25	51.18	54.26	51.30	50.93	52.49	50.05	46.89	45.93	45.92	45.52	44.83	47.61	48.32	48.97	49.89	53.92

a. For the scope of expenditures, see footnote a, Table 1. Because of rounding, components may not add to the totals shown.

b. For additional detail, see Table 9.

c. For additional detail, see Table 10.

d. For additional detail, see Table 11.

e. Including expenditures relating to military personnel on active duty who are engaged in RDT&S.

Table 9
Soviet Expenditures for Strategic Attack Forces, by Element a/
1950-66

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	Billion 1964 US \$
Intercontinental Attack		0.13	0.11	1.01	0.70	0.91	1.00	1.48	1.69	1.87	2.53	3.20	2.69	2.71	4.11			
IIRB Heavy Bombers		0.13	0.11	1.01	0.67	0.72	0.56	0.80	0.80	0.61	0.55	0.41	0.40	0.37	0.33			
Ballistic Missile Subs					0.03	0.19	0.39	0.56	0.66	0.57	0.32	0.19	0.14	0.14	0.21			
ICBM's						Negl.	0.05	0.12	0.23	0.69	1.66	2.60	2.15	2.20	3.57			
Peripheral Attack	1.75	1.82	1.78	1.61	2.27	2.75	2.61	2.67	2.99	2.91	3.19	3.45	3.67	2.56	2.27	1.77	1.55	
IIRB Medium Bombers	1.75	1.82	1.78	1.61	2.27	2.75	2.56	2.40	2.14	1.14	1.05	0.99	1.00	0.97	0.96	0.90	0.91	
MRBM's and IRBM's						Negl.	0.05	0.27	0.85	1.77	2.14	2.46	2.67	1.59	1.31	0.87	0.64	R-E-H
Joint Support	0.12	0.14	0.16	0.15	0.18	0.17	0.19	0.18	0.19	0.16	0.13	0.10	0.11	0.12	0.13	0.14	0.16	
Total	1.88	1.96	1.94	1.88	2.56	3.93	3.50	3.76	4.18	4.55	5.00	5.43	6.30	5.88	5.09	4.62	5.82	

a. For the scope of expenditures and a definition of mission, see footnote a, Table 3. Because of rounding, components may not add to the totals shown.

Table 10

Soviet Expenditures for Strategic Defense Forces, by Element a/
1950-66

	Billion 1964 US \$																	
	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	
Control and warning	0.46	0.55	0.69	0.80	0.84	0.82	0.82	0.89	1.09	1.27	1.53	1.50	1.56	1.55	1.55	1.47	1.41	
Interceptor aircraft	0.72	0.93	1.81	2.38	2.13	1.97	2.27	2.32	1.89	1.67	1.49	1.42	1.45	1.14	1.33	1.36	1.75	
SAM's and ABM's					0.03	0.26	0.73	0.80	0.49	0.56	0.88	1.48	2.00	2.41	2.46	2.90	3.47	4.62
Antiaircraft artillery					0.76	0.98	1.16	1.03	1.05	1.05	1.10	1.01	0.81	0.50				
Total	<u>1.95</u>	<u>2.45</u>	<u>3.67</u>	<u>4.24</u>	<u>4.30</u>	<u>4.57</u>	<u>4.94</u>	<u>4.80</u>	<u>4.55</u>	<u>4.64</u>	<u>5.00</u>	<u>4.92</u>	<u>5.42</u>	<u>5.15</u>	<u>5.77</u>	<u>6.29</u>	<u>7.78</u>	

a. For the scope of expenditures and a definition of mission, see footnote a, Table 4. Because of rounding, components may not add to the totals shown.

Table 11

Soviet Expenditures for General Purpose Forces, by Element a/
1950-66

	Billion 1964 US \$																
	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
Ground Forces	19.41	22.24	23.30	20.07	17.53	16.69	14.08	12.81	11.53	11.09	10.27	8.80	8.87	8.76	8.57	8.99	9.20
Tactical Aviation	3.75	4.92	3.74	3.54	4.49	3.29	2.93	2.59	2.59	2.07	1.57	1.57	1.65	1.99	2.05	2.08	2.14
Military Transport Aviation	0.45	0.50	0.57	0.69	0.66	0.75	1.12	1.24	1.50	1.58	1.69	1.82	1.81	1.83	1.78	1.61	1.68
Submarines	0.27	0.32	0.53	0.74	1.11	1.43	1.58	0.80	0.73	0.88	1.05	1.15	1.48	1.59	1.62	1.47	1.37
Surface Ships	2.00	2.35	2.37	2.17	2.20	2.23	2.11	1.98	1.85	1.93	1.91	1.83	1.76	1.73	1.79	1.82	1.83
Naval Aviation	0.64	1.18	1.83	1.89	1.57	2.41	1.95	0.83	0.87	0.99	0.59	0.42	0.54	0.57	0.58	0.59	0.68
Naval Joint Support	1.92	2.34	2.34	1.90	1.68	1.71	1.62	1.60	1.56	1.49	0.94	0.86	0.88	0.86	1.01	0.85	0.85
Naval Nuclear Weapons								Negl.	Negl.	Negl.	Negl.	0.01	0.02	0.08	0.11	0.06	0.05
Total	28.14	33.86	34.67	31.00	29.24	28.51	25.40	21.85	20.63	20.02	18.04	16.48	17.06	17.44	17.47	17.80	

a. For the scope of expenditures and a definition of mission, see footnote a, Table 5. Because of rounding, components may not add to the totals shown.

Table 12

Soviet Defense Expenditures, by Category of Expenditure a/
1950-66

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	Billion 1964 US \$
RDTE&S b/	0.89	1.02	1.11	1.29	1.60	1.93	2.40	2.96	3.42	3.91	4.76	5.51	6.27	7.38	8.22	9.07	10.02	
Investment expenditures	10.07	12.84	13.29	12.82	13.53	15.63	14.37	11.78	11.69	11.86	12.41	12.68	13.77	12.94	12.32	11.92	14.44	
Procurement	9.29	11.95	12.33	11.95	12.59	14.66	13.46	11.02	10.87	10.99	11.62	11.76	12.57	11.95	11.49	10.68	12.58	
Land armaments	1.81	2.37	2.48	2.30	2.12	2.40	2.28	2.08	1.97	1.62	1.16	1.04	0.97	1.02	1.00	1.04	1.03	
Naval ships and boats	0.97	1.24	1.35	1.29	1.68	1.90	1.88	1.07	1.06	1.41	1.61	1.59	1.59	1.55	1.70	1.38	1.23	
Aircraft	3.33	5.28	5.05	5.07	5.48	6.96	5.97	4.41	3.43	2.39	2.73	2.64	2.76	2.65	2.67	2.51	3.06	
Missile systems	0.01	0.02	0.04	0.11	0.30	0.51	0.53	0.54	1.22	2.26	2.70	3.30	3.93	3.39	2.92	2.75	4.26	
Electronic equipment	0.29	0.41	0.60	0.58	0.58	0.56	0.61	0.80	1.08	1.13	1.27	1.16	1.17	1.11	1.09	0.99	0.88	
Nuclear weapons	0.08	0.12	0.13	0.22	0.26	0.26	0.33	0.38	0.48	0.60	0.76	0.79	0.90	0.98	0.86	0.75	0.81	
Other	2.21	2.51	2.67	2.37	2.17	2.07	1.86	1.75	1.63	1.56	1.40	1.23	1.25	1.24	1.24	1.27	1.30	
Facilities	0.78	0.89	0.97	0.88	0.94	0.97	0.92	0.77	0.81	0.87	0.78	0.91	1.20	0.99	0.83	1.25	1.86	
Operating expenditures	33.29	37.32	39.85	37.19	35.79	34.94	33.27	32.15	30.82	30.15	28.36	26.65	27.57	28.00	28.42	28.89	29.47	
Personnel	26.40	29.65	31.50	28.31	26.27	25.14	22.80	21.56	20.38	19.81	18.09	16.62	17.16	17.25	17.42	17.70	18.15	
Operation and maintenance	6.90	7.66	8.36	8.88	9.53	9.80	10.47	10.59	10.44	10.34	10.26	10.03	10.41	10.75	11.00	11.19	11.33	
Total	44.25	51.18	54.26	51.30	50.93	52.49	50.05	46.89	45.92	45.52	47.61	44.83	48.32	48.97	49.89	53.92		

a. Because of rounding, components may not add to the totals shown.

b. Excluding expenditures relating to military personnel on active duty who are engaged in RDTE&S.